



WOODARD & CURRAN
Engineering • Science • Operations

**PORTLAND CHEMICAL WORKS
ENVIRONMENTAL SITE ASSESSMENT
PHASE II AND III REPORT**

**PREPARED FOR:
CITY OF MIDDLETOWN**

AUGUST 1998

EXECUTIVE SUMMARY

Executive Summary

As a follow up to the Phase I performed in June 1998, Woodard & Curran (W&C) has completed Phases II and III of the Environmental Site Assessment for the site formerly occupied by Portland Chemical Works located at 680 Newfield Street, Middletown, Connecticut. The work was performed in accordance with the contract scope of work presented in the work order agreement between W&C and the City of Middletown dated May 28, 1998.

These Phase II and III investigations were performed to investigate potential concerns associated with contamination of the soil and /or groundwater only. Although not discussed in this report, demolition and removal of tanks, piping, and associated materials is understood to be required at the Site. This will be the subject of future reports, specifically, the Remedial Action Plan.

In general the results of the investigations are that groundwater does not require remediation at the site, and that remediation will be focussed on removing contaminated soil and materials from three specific areas on the site.

The Phase II field investigation occurred in early July 1998 to determine the presence or absence of subsurface contamination at each of the nine Areas of Concern (AOCs) identified in the Phase I Report. The results of the Phase II investigation indicated TPH levels above the Connecticut Remediation Standard Regulations Commercial/Industrial Criteria for Direct Exposure at AOC #2, the Loading Rack and AOC #6, the Aboveground Storage Tanks. Minor levels of chlorinated hydrocarbons and solvents were detected in the soil and groundwater near the Chemical Manhole, AOC #5. As a result of the Phase II activities, it was determined that the remaining six AOCs do not warrant further investigation or remediation.

The Phase II investigation also found that although detectable levels of some solvents were observed in the groundwater, groundwater contamination was generally not an issue because the groundwater at the site is classified GB, wells nearest to the only surface water body contained no detectable contamination, and there is no building in the one location where the RSR volatilization criteria was exceeded. It appears that groundwater may have been somewhat protected against contamination by on-site activities by a sub-surface clay layer which acts as a barrier to contaminant migration.

The Phase III field investigation occurred in early August 1998 to determine the lateral and vertical extent of contamination present at each of the three AOCs where contamination was detected during the Phase II investigation. Significant TPH soil contamination was delineated over a wide area near the Loading Rack, AOC #2. W&C estimates approximately 185 cubic yards (280 tons) of soil is contaminated near the Loading Rack from just west of the rack to approximately twenty feet east of the bridge and from the toe of the tank farm dike to the toe of the railroad bed. The depth of the contamination is limited to the top two feet of soil. This material would likely warrant removal and disposal, and will be addressed in detail in the pending Remedial Action Plan.

The Phase III investigation also identified the presence of a leach field approximately six to eight feet directly below the Chemical Manhole, AOC #5. The field investigation indicated that the leach field extends ten feet in all four directions away from the manhole. This leach field apparently historically received spillage and rinsewater from a floor drain in the adjacent drum filling building. This operation is most likely the source of low-level residual VOC contamination identified in the leach field material and in a very limited area of groundwater (one well location). It is assumed that remediation of this AOC would consist of excavation and removal of the leach field. The estimated total volume of material to be

addressed at the chemical manhole location is approximately 120 cubic yards (180 tons). This activity will be discussed in the pending Remedial Action Plan.

Significant TPH soil contamination was detected in the area of the 275-gallon Aboveground Storage Tanks, AOC #6. The aerial extent of contamination appeared to coincide with visible soil staining on the ground surface, with the depth of contamination ranging from four feet on the eastern edge to eight feet on the western edge of the staining. The estimated total volume of contaminated soil is 50 cubic yards (75 tons). This soil will likely warrant removal and disposal, and will be addressed in detail in the pending Remedial Action Plan.

TABLE OF CONTENTS

TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
2.0	PHASE II.....	2
2.1	Methodology	2
2.2	Results	3
2.3	Discussion	5
3.0	PHASE III	14
3.1	Methodology	14
3.2	Results	14
3.3	Discussion	15
4.0	CONCLUSIONS	24

APPENDIX A Monitoring Well Logs
APPENDIX B Phase II Analytical Results
APPENDIX C Geoprobe Summary
APPENDIX D Phase III Analytical Results

LIST OF TABLES

TABLE 2-1	Phase I Areas of Concern	7
TABLE 2-2	Phase II Soil Sampling Results	8
TABLE 2-3	Phase II Groundwater Sampling Results.....	9
TABLE 2-4	Well and Groundwater Elevations	10
TABLE 2-5	Phase II Summary	11
TABLE 3-1	Phase III Soil Sampling Results	17

LIST OF FIGURES

FIGURE 2-1	Phase II Sampling Locations.....	12
FIGURE 2-2	Groundwater Contours	13
FIGURE 3-1	AOC #2 – Loading Rack Sampling Locations.....	18
FIGURE 3-2	AOC #5 – Chemical Manhole Sampling Locations	19
FIGURE 3-3	AOC #6 - Aboveground Storage Tanks Sampling Locations	20
FIGURE 3-4	AOC #2 – Loading Rack TPH Concentrations	21
FIGURE 3-5	AOC #5 – Chemical Manhole TPH Concentrations	22
FIGURE 3-6	AOC #6 - Aboveground Storage Tanks TPH Concentrations.....	23

SECTION 1

1.0 INTRODUCTION

Woodard & Curran Inc. (W&C) performed Phases II and III of the environmental site assessment for the Portland Chemical Works (PCW) site in accordance with the contract scope of work presented in the work order agreement between W&C and the City of Middletown dated May 28, 1998. Field activities were conducted between July 1, 1998 and August 3, 1998. This report details the methodology and results of the Phase II and III activities. These results will form the basis for the pending Remedial Action Plan, which will present a recommended course of action and cost estimates for remediation of environmental issues at the site.

The information in the report is presented in such a manner as to reflect the various phases of the investigation. The Phase II discussion starts with the nine Areas of Concern (AOCs) identified in the Phase I Report (June 1998) and describes how these AOCs were investigated to determine the "presence or absence" of contamination. The results of the Phase II investigation are shown to determine which AOCs are "non-issues" and which were found to have contamination warranting a Phase III investigation to determine the extent of contamination. The Phase III discussion takes the remaining AOCs through the delineation study process, and presents the results and assumptions used to determine the location and extent of the contaminated area which will in turn be incorporated into a Remedial Action Plan.

A feature of the site that had a significant effect on both the design and findings of the investigation is the GB (degraded) classification of groundwater underlying the site. The GB classification means that less regulatory criteria apply to groundwater quality, and that cleanup levels for contaminated soil are less stringent than for sites located over a GA (drinking water quality) aquifer.

In evaluating this site, sample results were compared to the State of Connecticut Remediation Standard Regulations (RSR) dated January 1996. The RSRs provide a set of minimum criteria that soil and groundwater characteristics must meet for a given land use. If any of the criteria were not met, remediation such as soil removal and/or groundwater remediation might be required at the site in order to attain the appropriate criteria levels. Relevant criteria for the Portland Chemical Works site include:

- Industrial/Commercial Direct Exposure Criteria for soil;
- Pollutant Mobility Criteria for soil located in a GB groundwater area;
- Surface Water Protection Criteria; and
- Industrial/Commercial Volatilization Criteria for groundwater.

Of these criteria, and as is discussed later in this report, the Direct Exposure criteria were found to be the primary driver for future remediation at the site.

SECTION 2

2.0 PHASE II

W&C performed Phase II of the assessment to investigate each of the Areas of Concern (AOCs) identified in the Phase I report (June 1998), as listed in Table 2-1 and shown in Figure 2-1. The purpose of the Phase II investigation was to determine the presence or absence of subsurface contamination which may present a risk of significant liability for each of the AOCs. The objective was to identify which of the nine AOCs warranted additional Phase III investigation, and which could be eliminated.

The Phase II investigation tasks and results are discussed in further detail below.

2.1 METHODOLOGY

The Phase II investigation consisted generally of the sampling of existing groundwater monitoring wells, the installation and sampling of several new soil borings/monitoring wells, and near surface soil sampling using a hand auger. Table 2-1 lists the sampling activities by AOC. Approximate sampling locations are depicted in Figure 2-1. A detailed discussion of the procedures is presented in the following paragraphs.

On July 1, 1998, four new soil borings/monitoring wells (MW-201, 202, 203, and 204) were installed at the site by New England Boring Contractors of Glastonbury, Connecticut. The borings/wells were installed using a bombardier-type drill rig and four-inch hollow stem augers. Continuous split spoon samples were collected to identify subsurface soil conditions and field screened using a photoionization detector. One sample was selected from each boring for laboratory analysis for the constituents listed below. The drill rig and associated augers and rods were steam-cleaned between each boring. Appendix A presents the well logs for each of the monitoring wells constructed.

On July 2, 1998, W&C collected fourteen near-surface soil/sediment samples to determine the presence or absence of soil contamination for five of the AOCs (AOC #1, #2, #5, #6, and #7). All samples were collected from 0.5 to 4 feet below ground surface using a hand auger. The soil sample was placed in an aluminum bowl and then transferred to sample jars with stainless steel spoons. The sample jars were then packed in ice for delivery to the laboratory. All sampling equipment including hand auger, spoons, and bowls were decontaminated between each sample using the USEPA-accepted three-step protocol. Quality Assurance/Quality Control was provided by the analysis of one duplicate sample, an equipment blank, and a trip blank.

On July 7 and 8, 1998, W&C personnel surveyed all well and water elevations and collected 12 groundwater samples from the monitoring wells at the site to determine the presence or absence of groundwater contamination. All wells were purged of at least three well volumes using a dedicated PVC bailer prior to collecting samples. Temperature, pH, and conductivity were recorded in the field logbook and proper sampling techniques were implemented to maintain sample integrity. An equipment blank and trip blank were also analyzed.

Complete Environmental Testing, Inc. of Shelton, Connecticut analyzed all soil/sediment and groundwater samples collected. Soil samples collected were analyzed for the following:

- Total Petroleum Hydrocarbons (TPH – Method 418.1),
- Cyanide,
- Total RCRA Metals including copper and nickel,
- SPLP Metals, and
- Volatile Organic Compounds (Method 8260).

Groundwater samples collected were analyzed for:

- Total Petroleum Hydrocarbons (TPH – Method 418.1),
- Cyanide,
- Dissolved RCRA Metals including copper and nickel, and
- Volatile Organic Compounds (Method 8260).

The results of the sampling and analysis program were evaluated and a decision made as to whether each AOC warranted additional investigation and/or remediation.

2.2 RESULTS

Table 2-2 presents a summary of the soil sample results and Table 2-3 presents a summary of the groundwater sample results. All results of the soil and groundwater analyses were compared to the Connecticut Remediation Standard Regulations (RSRs). The laboratory analytical data is presented in Appendix B.

The site generally slopes from the west to the east across the site with a wetland area in the eastern portion of the site. The top two to five feet of soil at the site consists of fine, silty sands. Clay is located throughout the entire site starting at one to five feet below the surface and continuing to a depth of at least 25 feet below ground surface. This substantial clay layer most likely acts as a barrier by restricting the mobility of any contaminants spilled or released on the site, effectively "protecting" the underlying groundwater.

Table 2-4 presents the well and groundwater elevations as observed on July 8, 1998 and Figure 2-2 presents the groundwater contours across the site. The data indicates that groundwater generally flows in a west to east direction across the site, with a slight radial flow observed in the vicinity of the Chemical Manhole (AOC #5).

AOC #1 - No contaminants were detected above applicable RSR criteria in the soil samples collected in the area of the **tank farm**, AOC #1. Additionally, no contaminants were discovered in the groundwater sampled from MW-203 and MW-204, adjacent and immediately downgradient of the tank farm. Therefore, the subsurface does not appear to have been impacted by the tank farm and no further investigation of AOC #1 is considered warranted.

AOC #2 - Petroleum-related compounds (TPH, ethylbenzene, toluene, and xylenes) were detected in all soil samples collected in the area of the **loading rack**, AOC #2. TPH exceeded the RSR Commercial/Industrial Criteria for Direct Exposure in three of the four samples. The sample of soil/sediment (location 2A) collected within the sump at the center of the loading rack exhibited the highest concentrations of petroleum compounds and some levels of solvents. No compounds were detected in the groundwater sampled at MW-203, immediately downgradient of the loading rack.

Further investigation of the groundwater in the area of the loading rack is not considered warranted. However, further investigation to define the lateral and vertical extent of TPH-contaminated soil in the area of the loading rack was performed during the Phase III investigation. The results of the Phase III investigation are discussed in Section 3.

AOC #3 - No contaminants were detected above RSR levels in either the soil or the groundwater samples collected at MW-202, immediately downgradient of the **heating oil underground storage tank (UST)**. Therefore, the subsurface does not appear to have been impacted by the heating oil UST and further investigation of AOC #3 is not warranted.

AOC #4 - No contaminants were detected above applicable RSR criteria in the groundwater sample collected at the existing monitoring well MW-101, immediately downgradient of the **gasoline and diesel USTs**. Therefore, groundwater does not appear to have been impacted by the gasoline and diesel USTs and further investigation of AOC #4 is not warranted. It is assumed that these tanks would be removed as part of redevelopment of the site, and that standard confirmation sampling would be done at this time to determine whether or not soil contamination is present.

AOC #5 - Groundwater quality does appear to have been impacted in the area immediately adjacent to the **chemical manhole**. Elevated concentrations of chlorinated solvents were detected in MW-106, the well directly adjacent to the chemical manhole, and minor levels of solvents (below RSR GA water quality criteria) were detected in wells MW-104, MW-105, MW-107, and MW-108 which are all located in the immediate vicinity of the chemical manhole.

1,2 Dichloroethane, cis-1,2 dichloroethylene, tetrachloroethylene, trichloroethylene, and vinyl chloride were detected in the groundwater sample from MW-106, the monitoring well closest to the chemical manhole. The levels detected did not exceed any applicable RSR criteria, but were significantly higher than at wells MW-104, MW-105, MW-107, and MW-108, indicating that the groundwater impact is confined to a small area. The level of vinyl chloride detected at MW-106 did exceed the RSR Volatilization Criteria. This is not an issue requiring any further action unless future site development includes placing a building over this area.

Since the groundwater at the site is classified GB, and because the soil is predominantly clay, the elevated levels observed in the groundwater in the area of the chemical manhole is not considered a concern requiring remediation. Further investigation was performed during Phase III to characterize the chemical manhole and subsurface soil/materials.

AOC #6 - Elevated TPH levels were detected in soil samples collected near the **aboveground fuel-oil storage tanks** near the northwest corner of Warehouse #2. The levels did not exceed industrial/commercial direct exposure or any other applicable RSR criteria. Further investigation of the area near the aboveground storage tanks is warranted to determine the lateral and vertical extent of TPH soil contamination.

AOC #7 - No constituents were detected above applicable RSR criteria in the soil/sediment samples collected in the area of the **debris** on the north side of the stream. A slightly elevated level of TPH (87 ppm) was detected in one of the two samples collected; however, the level was well below the RSR Industrial/Commercial Direct Exposure Limit criteria of 2500 ppm. Therefore, the subsurface does not appear to have been greatly impacted by the debris observed on the north side of the stream and further investigation of AOC #7 is not considered warranted.

AOC #8 - Low levels of solvents were detected in the groundwater sampled at MW-102, immediately downgradient of **Warehouse #1**. All constituents detected were below any applicable RSR criteria, and are not considered indicative of an on-going source of contamination to the groundwater. Therefore, further investigation of AOC #8 is not warranted.

AOC #9 - Low levels of solvents were also detected in the groundwater sampled at MW-103, immediately downgradient of Warehouse #2. All constituents detected were below any applicable RSR criteria, and are not considered indicative of an on-going source. Therefore, further investigation of AOC #9 is not warranted.

2.3 DISCUSSION

Table 2-5 presents a summary of the findings for Phase II of the environmental assessment. No contamination was observed in the soil or groundwater for AOC #1 - the tank farm, AOC #3 - the heating oil UST, AOC #4 - the gasoline and diesel UST, and AOC #7 - the debris area on the north side of the stream. The absence of contamination warranting remediation has been confirmed at these locations, therefore these areas do not require further investigation.

Contamination warranting remediation was identified at three AOCs. These were:

- AOC #2 - the Loading Rack;
- AOC #5 - the Chemical Manhole; and
- AOC #6 - the Aboveground Storage Tanks.

These AOCs were the subject of the subsequent Phase III investigation.

Significant soil/sediment TPH contamination was observed at AOC #2, the loading rack, as discussed in Section 2.2. Groundwater samples collected at MW-203, immediately downgradient of the loading rack, indicate the contamination has not impacted the groundwater. Therefore, further investigation was performed on only the soil in this area to further delineate the horizontal and vertical extent of TPH contamination present. This was performed during Phase III of the assessment and the results are discussed below in Section 3.

Groundwater quality appears to have been impacted by elevated levels of chlorinated hydrocarbons and solvents in the area immediately surrounding the chemical manhole (AOC #5). The extent of this impact is limited to the area between the chemical manhole and monitoring wells MW-104, MW-107, and MW-108. Since the detected concentrations are below any applicable RSR criteria, remediation of groundwater is not considered an issue. Subsurface soil in the area of the chemical manhole was addressed during Phase III and is described in Section 3.

Vinyl chloride detected in the groundwater at one well location, MW-106, exceeded the RSR Volatilization Criteria. This criteria applies to groundwater located beneath a building where volatile organic compounds could travel through the overlying soil, enter the building, and endanger the occupants. The "exceedance" in this case does not technically apply since there is no building at this location. If future plans call for construction of a building in this area, engineering controls could easily be put in place for a relatively low cost.

Since the groundwater at AOC #5 has been determined not to be a remediation concern, further investigation of the area was limited to determining the nature of the chemical manhole and the possibility of the manhole being a continuing source of the solvents found in the groundwater. Additionally, the soil in the immediate area around the chemical manhole was investigated. This further investigation was performed during Phase III of the assessment and the results are discussed below in Section 3.

Elevated levels of TPH were observed in the area of the 275-gallon aboveground storage tanks, AOC #6. Additional sampling to determine the lateral and vertical extent of contamination present was warranted.

This additional sampling was performed during Phase III of the assessment and the results are discussed in Section 3 below.

The low levels of solvents observed near Warehouses #1 and #2 (MW-102 and MW-103, respectively) do not require further investigation. As previously discussed, since the site is in a GB groundwater area, the results are not indicative of a continuing source of contamination, and because the underlying soils are predominantly clay, subsurface contamination is not considered an issue and these units are no longer considered an area of concern.

TABLE 2-1
PHASE I AREAS OF CONCERN

AREA OF CONCERN	ISSUE	PHASE II ACTIVITY
1. Tank Farm	Chemical storage and pipe transfer, soil within diked area, dike breached to wetland	Five near-surface soil samples were collected within the diked area and analyzed. Soil and groundwater samples were collected from MW-203 and MW-204 and analyzed.
2. Loading Rack	Chemical pipe transfer, including hand hookups, inadequate spill containment	Four near-surface soil samples were collected just off the concrete pad and from within a sump on the pad and analyzed. Soil and groundwater samples were collected from MW-203 and analyzed.
3. Heating Oil Underground Storage Tank (UST)	Potential release to subsurface	Soil and groundwater samples were collected from MW-202 and analyzed.
4. Gasoline and Diesel USTs	Potential release to subsurface	A groundwater sample was collected from MW-101 and analyzed.
5. Chemical Manhole	Apparently designed to receive spilled chemicals from drum filling building, possible that releases triggered the installation of nearby monitoring wells	A soil sample was collected from within the unit and analyzed. Groundwater samples were collected from five wells (MW-104, 105, 106, 107, and 108) and analyzed.
6. Aboveground Fuel-oil Storage Tanks	Visual evidence of releases to surface soil	Two near-surface soil samples were collected and analyzed.
7. Debris Area on North Side of Stream and historic drums	Presence of petroleum containers, general dump area	Two near-surface soil/sediment samples were collected and analyzed.
8. Area Downgradient of Warehouse #1 (9,000 s.f. building)	Potential impacts associated with material handling in the vicinity of the warehouse	A groundwater sample from MW-102 was collected and analyzed.
9. Area Downgradient of Warehouse #2 (8,000 s.f. building)	Potential impacts associated with material handling in the vicinity of the warehouse	Groundwater samples from three wells (MW-103, 104, and 202) were collected and analyzed.

TABLE 2-2
PHASE II SOIL SAMPLING RESULTS

	Detection Limit	D.E. I/C	GB P.M.	Units	AOC #1 Tank Farm					AOC #2 Loading Rack				AOC #5 Chemical Manhole	AOC #6 Aboveground Tanks		AOC #7 Stream Sediments			Soil Borings							
					1A	1B	1C	1D	1E	2A	2B	2C	2D		6A	6B	7A	7B	DUP (7B)	202	203	204					
TPH	50	2,500	2,500	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Cyanide	5	41,000	2	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
TOTAL METALS																											
Pb	1	1,000		mg/kg	0	6.5	5.9	8.3	7.6	33	37	27	97	20	10	81	11	28	29	6	6.7	7.9					
Cd	1	1,000		mg/kg	ND	ND	ND	ND	ND	2.4	2.1	1.5	2.3	ND	ND	ND	1.4	1.5	1.7	ND	ND	ND	ND	ND	ND		
Cr	100*			mg/kg	10	11	12	14	15	19	23	21	32	310	10	13	20	20	12	19	20	13					
As	2	10		mg/kg	ND	ND	ND	ND	ND	4.6	2.7	ND	8.9	ND	ND	7.8	ND	3.4	2.1	3.6	2.1	ND	ND	ND	ND		
Se	1	10,000		mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Hg	0.2	610		mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Ba				mg/kg	61	99	75	620	92	120	180	180	390	47	68	89	120	78	92	130	140	55					
Ag	2	10,000		mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Cu		76,000		mg/kg	11	19	12	15	15	64	73	76	71	82	58	32	12	23	21	20	17	8.9					
Ni		7,500		mg/kg	12	14	14	15	17	25	34	27	28	11	17	19	16	16	12	23	22	12					
SPLP METALS																											
Pb	0.013		0.15	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Cd	0.005		0.05	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Cr	0.05		0.5	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
As	0.05		0.5	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Se	0.01		0.5	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Hg	0.002		0.02	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Ba			10	mg/L	0.46	0.49	0.49	0.58	1.4	0.31	0.31	0.4	0.35	0.46	0.4	0.49	0.38	0.32	0.37	0.69	0.38	0.38					
Ag	0.02		0.56	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Cu	0.05		13	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Ni	0.05		1	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
VOLATILES																											
1,1-Dichloroethylene	5.0	1,000	1,400	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
cis-1,2-Dichloroethylene	5.0	1,000,000	14,000	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Ethylbenzene	5.0	1,000,000	10,100	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Isopropylbenzene	5.0	-	-	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
n-Propylbenzene	5.0	-	-	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Tetrachloroethylene	5.0	110,000	1,000	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Toluene	5.0	1,000,000	67,000	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Trichloroethylene	5.0	520,000	1,000	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
1,2,4-Trimethylbenzene	5.0	-	-	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
1,3,5-Trimethylbenzene	5.0	-	-	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
Vinyl Chloride	10.0	3,000	400	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
o-Xylene	5.0	1,000,000*		ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
m-p-Xylenes	5.0	1,000,000*	19,500*	ug/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		

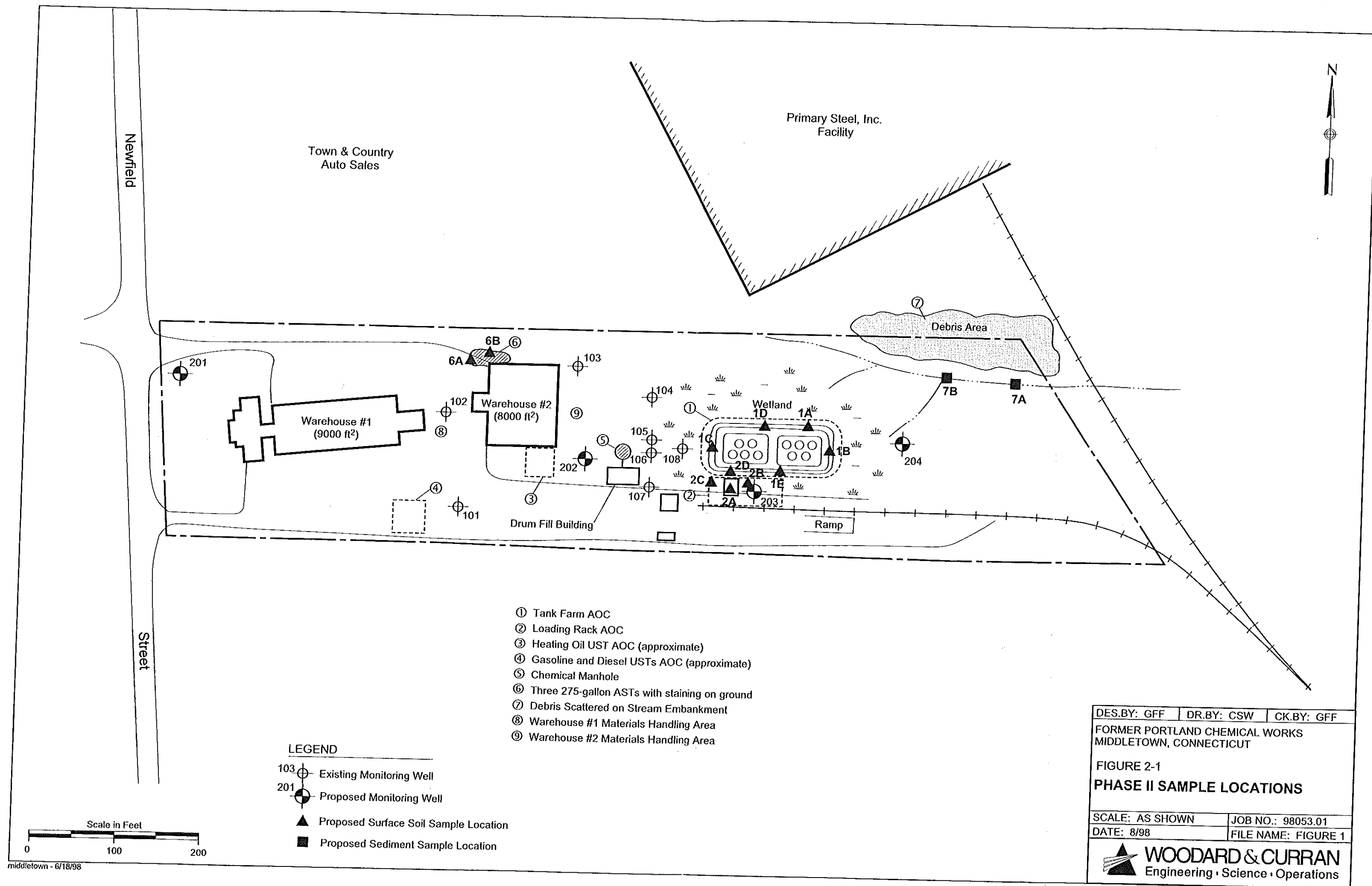
TABLE 2-4
WELL AND GROUNDWATER ELEVATIONS

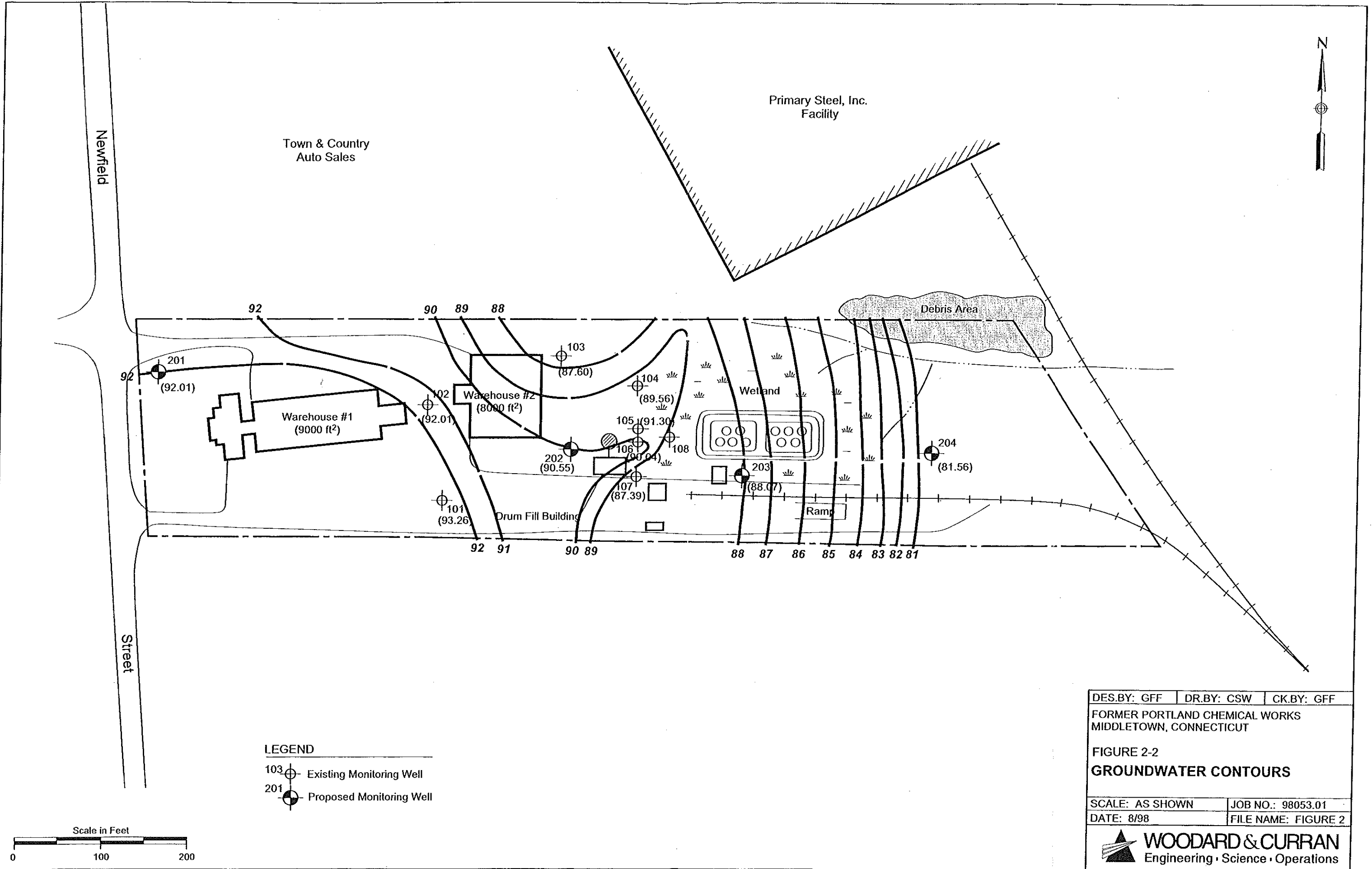
	Elevation of top of PVC riser	Well Construction		7/8/98	
		Depth of Well	Well Bottom Elevation	Water Level	Water Elevation
MW-101	96.15	11.22	84.93	2.89	93.26
MW-102	94.21	11.75	82.46	2.2	92.01
MW-103	92.88	11.75	81.13	5.28	87.6
MW-104	94.94	15.14	79.8	5.38	89.56
MW-105	92.7	21.2	71.5	1.4	91.3
MW-106	96.4	15.37	81.03	6.36	90.04
MW-107	95.64	15.16	80.48	8.25	87.39
MW-108	*	14.3	*	6.29	*
MW-201	97.58	16.4	81.18	5.57	92.01
MW-202	92.58	17.65	74.93	2.03	90.55
MW-203	90.32	14.83	75.49	2.25	88.07
MW-204	87.84	15.85	71.99	6.28	81.56

* Unable to survey monitoring well MW-108 due to restricted lines of sight.

TABLE 2-5
PHASE II SUMMARY

AREA OF CONCERN	ISSUE	PHASE II ACTIVITY	PHASE III ISSUES
1. Tank Farm	Chemical storage and pipe transfer, soil within diked area, dike breached to wetland	Five near-surface soil samples were collected within the diked area and analyzed. Soil and groundwater samples were collected from MW-203 and MW-204 and analyzed.	None Identified
2. Loading Rack	Chemical pipe transfer, including hand hookups, inadequate spill containment	Four near-surface soil samples were collected just off the concrete pad and from within a sump on the pad and analyzed. Soil and groundwater samples were collected from MW-203 and analyzed.	Soil contamination present
3. Heating Oil Underground Storage Tank (UST)	Potential release to subsurface	Soil and groundwater samples were collected from MW-202 and analyzed.	None Identified
4. Gasoline and Diesel USTs	Potential release to subsurface	A groundwater sample was collected from MW-101 and analyzed.	None Identified
5. Chemical Manhole	Apparently designed to receive spilled chemicals from drum filling building, possible that releases triggered the installation of nearby monitoring wells	A soil sample was collected from within the unit and analyzed. Groundwater samples were collected from five wells (MW-104, 105, 106, 107, and 108) and analyzed.	Slight groundwater contamination; potential soil contamination
6. Aboveground Fuel-oil Storage Tanks	Visual evidence of releases to surface soil	Two near-surface soil samples were collected and analyzed.	Soil contamination present
7. Debris Area on North Side of Stream and historic drums	Presence of petroleum containers, general dump area	Two near-surface soil/sediment samples were collected and analyzed.	None Identified
8. Area Downgradient of Warehouse #1 (9,000 s.f. building)	Potential impacts associated with material handling in the vicinity of the warehouse	A groundwater sample from MW-102 was collected and analyzed.	None Identified
9. Area Downgradient of Warehouse #2 (8,000 s.f. building)	Potential impacts associated with material handling in the vicinity of the warehouse	Groundwater samples from three wells (MW-103, 104, and 202) were collected and analyzed.	None Identified





SECTION 3

3.0 PHASE III

W&C performed Phase III of the environmental assessment of the Portland Chemical Works site to further investigate those AOCs requiring further delineation following the Phase II investigation. The purpose of the Phase III investigation was to determine the nature and extent of the contamination observed during Phase II. These results will be used to develop a course of action and cost estimate for remediation to be presented in a subsequent Remedial Action Plan.

During the Phase II, elevated levels of TPH were observed in the soil at AOC #2 – the Loading Rack, and AOC #6 – the 275-gallon aboveground storage tanks. Low levels of chlorinated hydrocarbons were observed in the groundwater near AOC #5 – the chemical manhole. Each of these AOCs was further investigated during Phase III of the assessment and the nature and extent of contamination was delineated. The objective of the Phase III investigation was to quantify the amount of material (e.g. soil) requiring remediation at each of the three remaining AOCs. In addition, the physical nature of the “chemical manhole” unit was characterized, which in turn allowed W&C to develop the information needed to remediate this unit.

3.1 METHODOLOGY

On August 3, 1998, W&C collected a total of 41 additional soil samples at AOC #2, AOC #5, and AOC #6. Soil samples were collected by means of a Geoprobe, a direct-push sampling device that drives a 1-inch diameter tube to the desired sampling depth. Samples were collected using stainless steel spoons and placed into sample jars and directly packed in ice for delivery to the laboratory. All samples were labeled and logged into the field logbook. All sampling equipment was decontaminated between samples using the USEPA-accepted three-step protocol. Quality Assurance / Quality Control (QA/QC) provisions included the collection of two duplicate samples.

Phase III sample locations for AOC #2, AOC #5, and AOC #6 are shown on Figures 3-1, 3-2, and 3-3, respectively. Locations were chosen in order to delineate the lateral and vertical extent of contamination warranting remediation in accordance with the Connecticut RSRs.

Zebra Environmental Corp. of Inwood, New York provided Geoprobe services. A summary of the work completed by Zebra is presented in Appendix C. Complete Environmental Testing, Inc. of Shelton, Connecticut analyzed all soil samples collected. All soil samples collected were analyzed for Total Petroleum Hydrocarbons (TPH) Method 418.1. One sample and a duplicate from the Chemical Manhole leach field were also analyzed for Volatile Organic Compounds (VOC) Method 8260.

3.2 RESULTS

Table 3-1 presents a summary of the soil sample analytical results for the Phase III investigation. The laboratory analytical data is presented in Appendix D.

AOC #2 – Twenty five soil samples were collected in the area of the loading rack in an attempt to delineate the lateral and vertical extent of TPH-contaminated soil. Six of these samples contained TPH concentrations above RSR Industrial/Commercial criteria for Direct Exposure (2500 ppm). Figure 3-4 depicts the sample locations and corresponding TPH concentrations. As shown, the highest concentrations are observed nearest the loading rack and along the pipe runs. As sample locations and the distance further away from the loading rack, soil sample concentrations decrease.

The vertical extent of the contamination appeared to be limited to the top two feet below ground surface, just above the clay which was encountered in the area between one and two feet below ground surface. The lateral extent of TPH contamination extends as far east as sample location 2S, and as far west as sample location 2J. The north/south limits of TPH contamination is assumed to be the exterior toe of the southern dike of the tank farm, and the northern toe of the railroad bed. These assumptions should be confirmed during remediation.

AOC #5 – As Figure 3-5 illustrates, no soil TPH concentrations were detected above the applicable RSR criteria of Direct Exposure in the area immediately surrounding the Chemical Manhole. However, during the Phase III investigation, it was observed that the chemical manhole appears to be connected to a leach field. Gravel and sand consistent with a leach field was observed in several of the Geoprobe borings, specifically, 5C, 5D, and 5E at a depth of approximately six to eight feet below ground surface. It has also been observed in the past that a floor drain located in the drum filling building is connected to the chemical manhole, apparently transporting all historic spills and washdown in the drum filling building to this leach field.

The leach field has been determined to extend approximately ten feet east and ten feet west of the chemical manhole through boring sample observations. For the purpose of volume calculations, it is assumed that the leach field also extends ten feet north and ten feet south of the chemical manhole as well, and is constructed in the shape of a square with the chemical manhole located directly in the center.

Elevated levels of chlorinated hydrocarbons and solvents were detected in the groundwater in the area of the chemical manhole. Since cis-1,2 dichloroethylene and vinyl chloride were detected in the soil sample collected at location 5D within the leach field, the leach field is considered to be the probable source of the elevated levels of VOCs observed in the groundwater.

AOC #6 – TPH concentrations exceeded RSR Industrial /Commercial Criteria for Direct Exposure for at two of the six samples collected near the 275-gallon aboveground storage tanks. Figure 3-6 illustrates the extent of soil staining observed at AOC #6, the approximate area requiring removal. The depth of soil contamination exceeding applicable RSR criteria was found to range from four feet on the eastern edge to eight feet on the western edge of the stained soil area.

3.3 DISCUSSION

TPH-contaminated soil has been observed in the area of the Loading Rack, AOC #2, and the lateral extent has been defined to extend approximately 100 feet from sample location 2J to 2S and 25 feet from the toe of the tank farm dike to the toe of the railroad bed. The depth of soil exceeding RSR criteria is estimated at two feet. This results in an estimated volume of soil requiring remediation of 185 cubic yards (approximately 280 tons) in the area of the Loading Rack.

Observations of the soil borings collected near the Chemical Manhole, AOC #5, indicate the presence of a leach field approximately six to eight feet below the ground surface. The leach field appears to extend approximately 10 feet east and 10 feet west of the manhole and is assumed to extend a similar distance north and south of the manhole. Elevated levels of cis-1,2 dichloroethylene and vinyl chloride detected in soil sample 5D from a depth of 4-8 feet indicate that the leach field is the probable source of elevated solvent concentrations detected in the groundwater during Phase II. Based on these results, W&C anticipates the removal of the leach field and associated soil (approximately 180 tons) in the area of the Chemical Manhole, AOC #5.

TPH-contaminated soil has been observed in the area of the aboveground storage tanks, AOC #6. The lateral and vertical extent of contamination requiring remediation has been defined. Approximately 200 square feet of area will require soil removal to an average depth of six feet. Consequently, W&C anticipates approximately 70 tons of soil will require removal in the area of the aboveground storage tanks, AOC #6.

TABLE 3-1
PHASE III SOIL SAMPLING RESULTS

	DEPTH (FT.)	TPH (ppm)	VOLATILES (ppb)
Detection Limit		50	
RSR Industrial/Commercial Direct Exposure		2500	
AOC #2 LOADING RACK			
2E	0 - 4	260	N/A
2F	0 - 4	88	N/A
2G	0 - 4	140	N/A
2H	0 - 4	9200	N/A
2I	0 - 4	65	N/A
2I	4 - 8	ND	N/A
2J	0 - 4	92	N/A
2J	4 - 8	ND	N/A
2K	0 - 4	140	N/A
2K	4 - 8	ND	N/A
2L	0 - 4	2600	N/A
2M	0 - 4	10000	N/A
2N	0 - 4	120	N/A
2N	4 - 8	ND	N/A
2O	0 - 4	5100	N/A
2P	0 - 4	6700	N/A
2Q	0 - 4	1400	N/A
2Q	4 - 8	ND	N/A
2R	0 - 4	3800	N/A
2S	0 - 4	1100	N/A
2T	0 - 4	640	N/A
2T	4 - 8	75	N/A
2U	0 - 4	670	N/A
2V	0 - 4	520	N/A
2V	4 - 8	ND	N/A
AOC #5 CHEMICAL MANHOLE			
5B	0 - 4	57	N/A
5B	4 - 8	ND	N/A
5C	0 - 4	58	N/A
5C	4 - 8	ND	N/A
5D	0 - 4	130	Cis-1,2 dichloroethylene (110) Vinyl Chloride (13)
5D	4 - 8	530	
5E	0 - 4	59	N/A
5E	4 - 8	ND	N/A
AOC #6 ABOVEGROUND TANKS			
6C	0 - 4	1600	N/A
6C	4 - 8	2700	N/A
6D	0 - 4	27000	N/A
6D	4 - 8	870	N/A
6E	0 - 4	710	N/A
6E	4 - 8	74	N/A

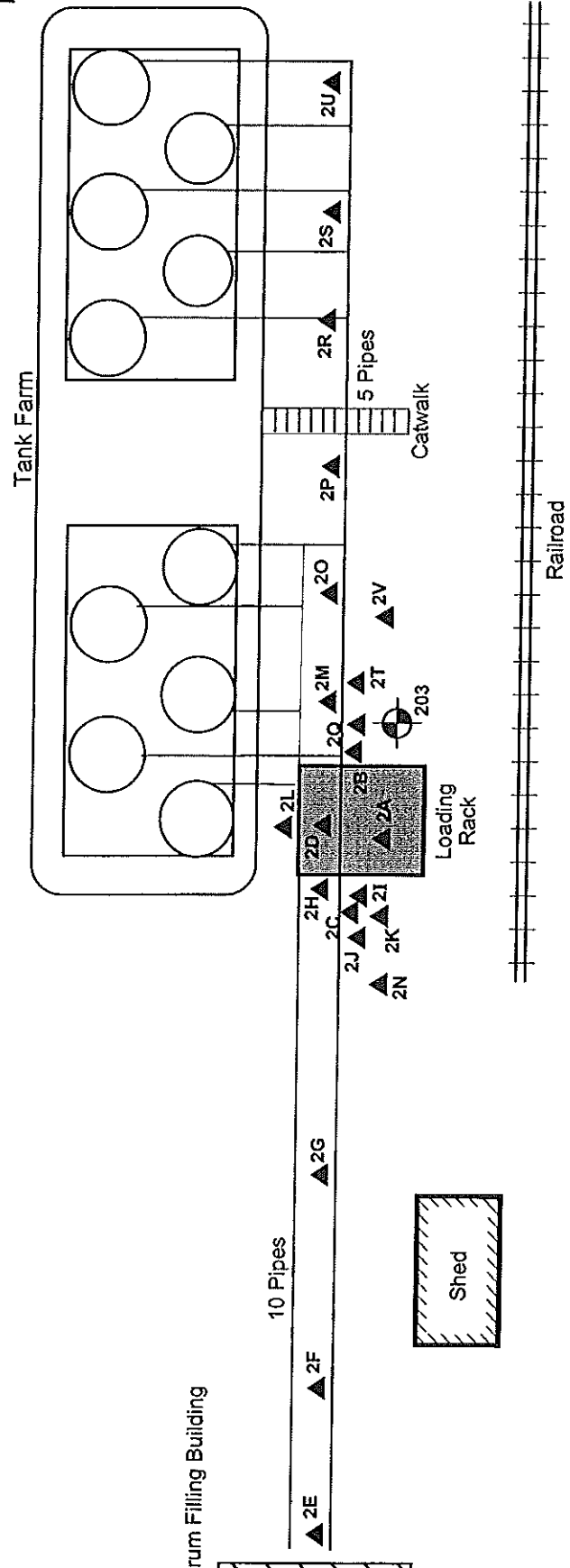
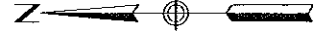


Figure 3-1
AOC #2 - Loading Rack Sampling Locations
Portland Chemical Works Site
Middletown, CT

WOODARD&CURRAN

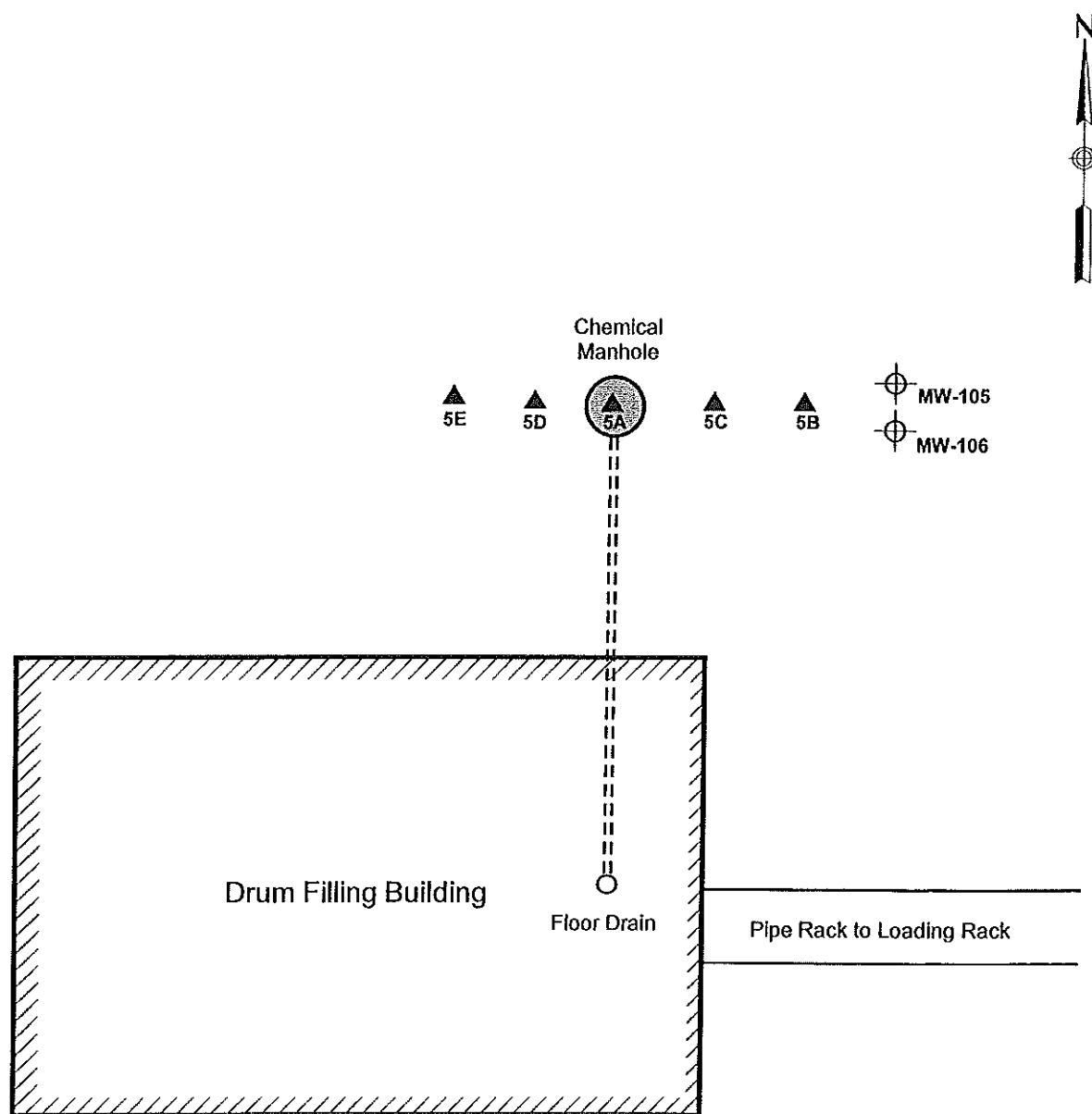


Figure 3-2
AOC #5 - Chemical Manhole Sampling Locations
Portland Chemical Works Site
Middletown, CT

Scale in Feet



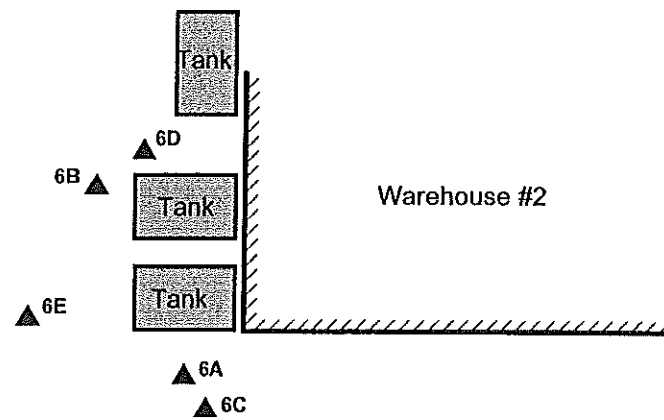


Figure 3-3
AOC #6 - Aboveground Storage Tanks
Sampling Locations
Portland Chemical Works Site
Middletown, CT

Scale in Feet



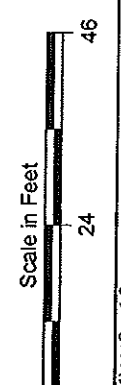
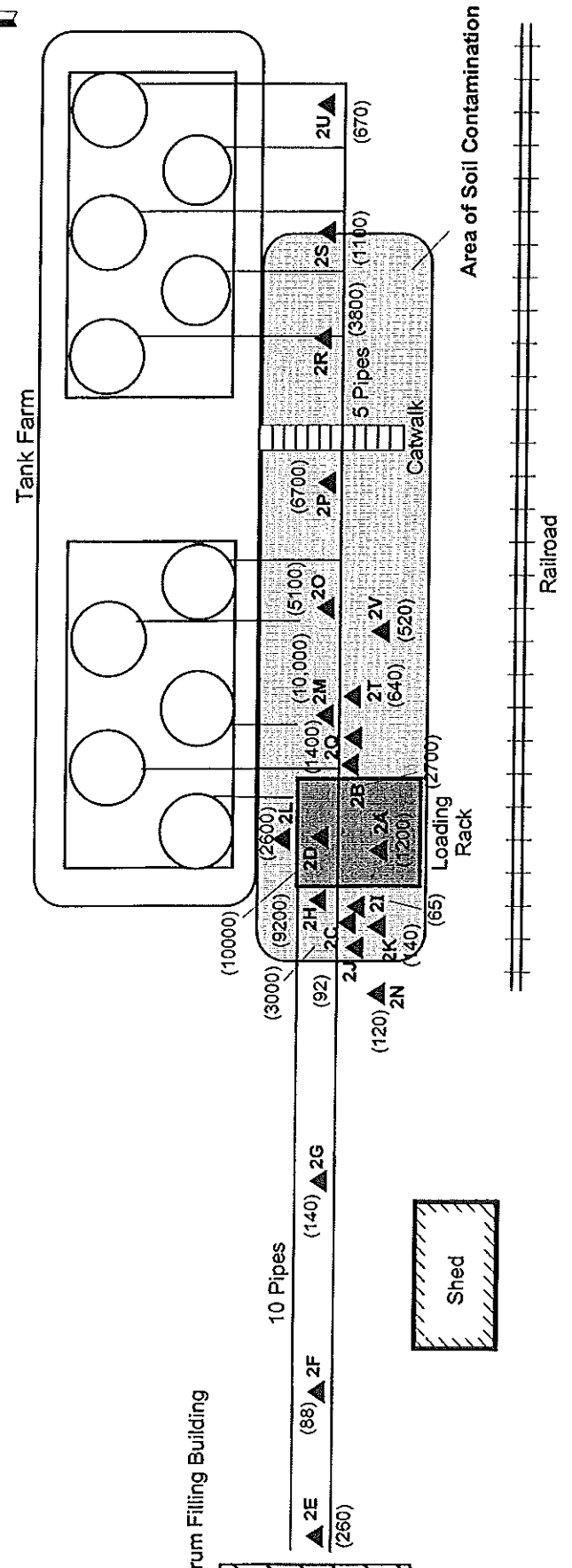
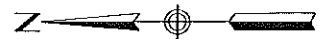


Figure 3-4
AOC #2 - Loading Rack TPH Concentrations
Portland Chemical Works Site
Middletown, CT
WOODARD&CURRAN

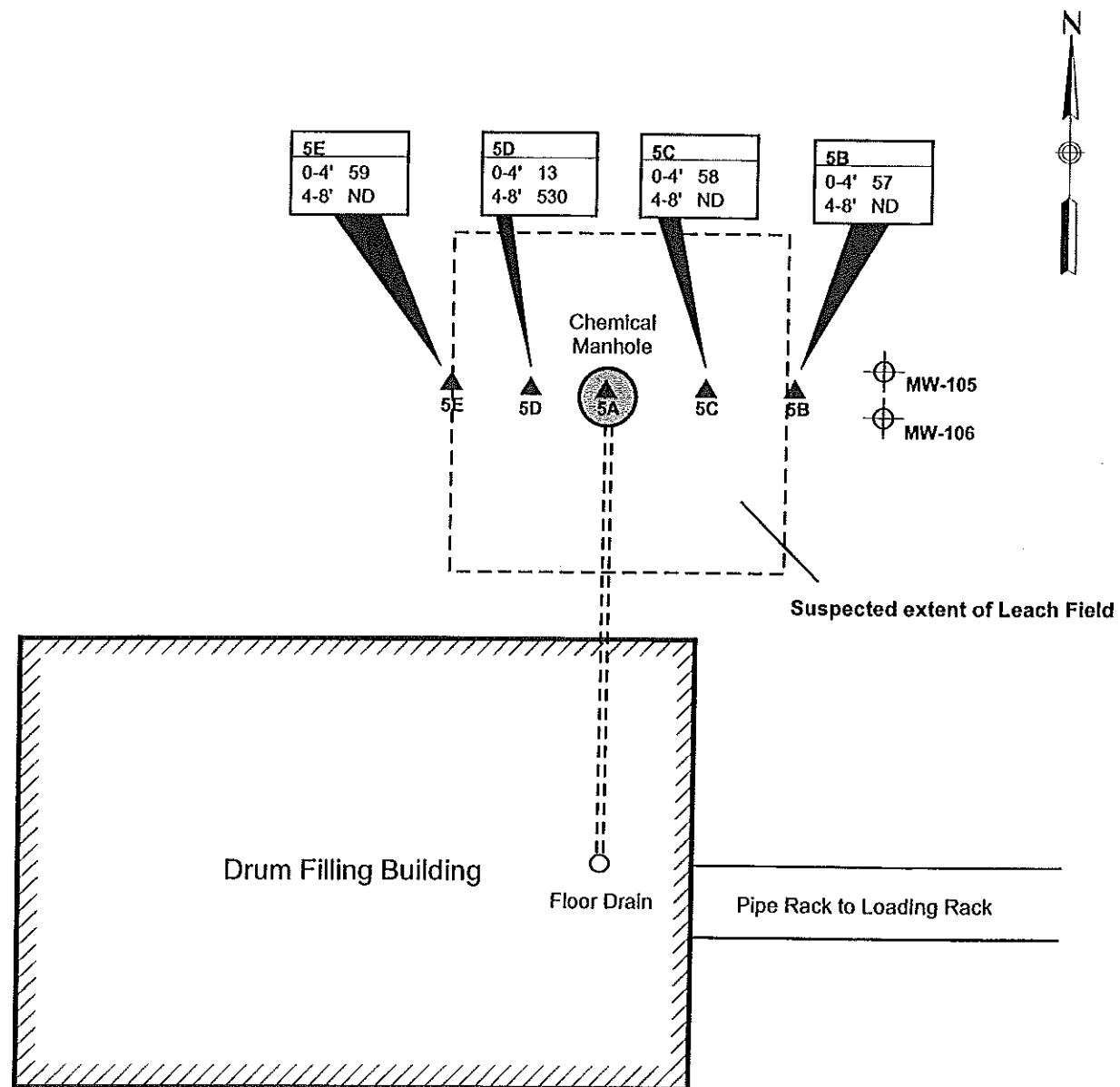


Figure 3-5
AOC #5 - Chemical Manhole TPH Concentrations
Portland Chemical Works Site
Middletown, CT

Scale in Feet

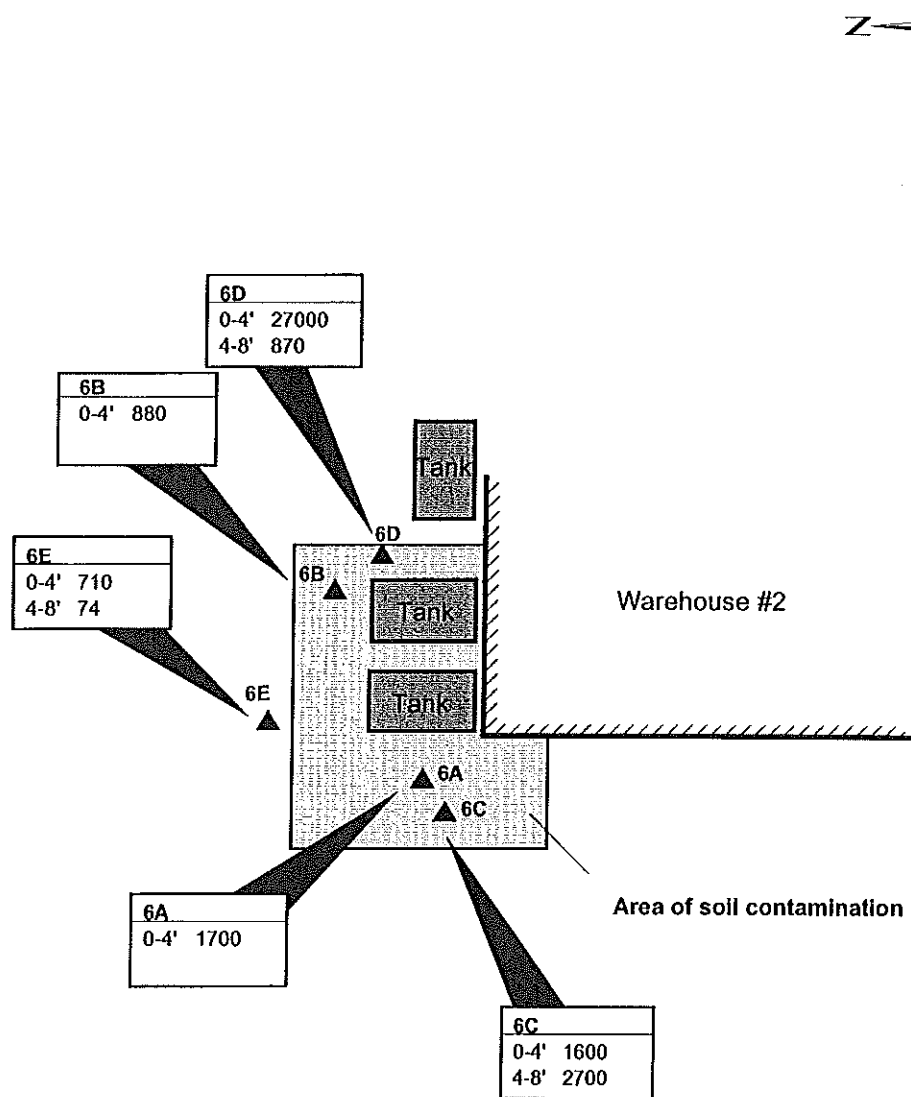


Figure 3-6
AOC #6 - Aboveground Storage Tanks
TPH Concentrations
Portland Chemical Works Site
Middletown, CT

SECTION 4

4.0 CONCLUSIONS

W&C has completed Phases II and III of the Environmental Site Assessment at the former Portland Chemical Works site located at 680 Newfield Street, Middletown, Connecticut, for the City of Middletown. The purpose of the Phase II and III investigations was to determine the presence or absence of subsurface contamination, and to delineate the nature and extent of any contamination present at the nine separate Areas of Concern (AOCs) identified in the Phase I Report (June 1998).

In order to determine what constituted "contamination" at the site, the investigation had to determine which of the Connecticut Remediation Standard Regulations (RSR) criteria were applicable, and which of these were exceeded. The results of the investigation were evaluated with respect to all five of the CT RSR criteria. The resulting conclusions are summarized below.

- Industrial/Commercial Direct Exposure Criteria for soil – This criteria was exceeded for TPH in two of the three AOCs which warrant remediation, and will be the remediation "driver" in these areas.
- Pollutant Mobility Criteria for soil – This criteria was not exceeded in any of the samples analyzed, and is not considered to be an issue at the site.
- Groundwater Protection – Groundwater at the site is classified GB. The RSR groundwater protection criteria do not apply to GB groundwater.
- Industrial/Commercial Volatilization Criteria for groundwater – Vinyl chloride detected in the groundwater at one well location, MW-106, exceeded the RSR Volatilization Criteria. This criteria applies to groundwater located beneath a building where volatile organic compounds could travel through the overlying soil, enter the building, and endanger the occupants. The "exceedance" in this case does not technically apply since there is no building at this location, and further action is not warranted at this time. If future plans call for construction of a building in this area, engineering controls could easily be put in place for a relatively low cost.
- Surface Water Protection Criteria – Groundwater at the site was shown to meet this criteria. Two of the monitoring wells (MW-203 and MW-204) are located between the on-site stream and the areas where low-level contamination was identified. Groundwater samples from these wells contained no detectable levels of RSR constituents.

These conclusions show that groundwater does not require remediation at the site, and that remediation will be targeted at removing contaminated soil.

During the Phase II Assessment, near-surface soil and sediment samples were collected and analyzed, four soil borings/monitoring wells were installed, and all twelve new and existing monitoring wells were sampled and analyzed. As a result of the Phase II investigation, three of the nine AOCs identified in the Phase I Report were found to have contamination issues warranting a Phase III delineation study. Those three AOCs are:

- AOC #2 – the Loading Rack,
- AOC #5 – the Chemical Manhole, and
- AOC #6 – the 275-Gallon Aboveground Storage Tanks.

The Phase II investigation also found that although detectable levels of some organic compounds were observed in the groundwater, groundwater contamination was not a remediation issue because no applicable RSR criteria were exceeded. It appears that groundwater may have been somewhat protected against contamination by on-site activities by a sub-surface clay layer which acts as a barrier to contaminant migration.

During the Phase III investigation, the above-mentioned AOCs were further investigated in an attempt to delineate the extent of soil contamination at each area. The conclusions of this investigation are detailed below.

AOC #2 – Loading Rack: Several soil samples collected and analyzed were found to exceed RSR Direct Exposure Criteria for Total Petroleum Hydrocarbons (TPH). The contamination was observed to run along the pipe rack and decrease with distance from the loading rack area. The extent of TPH contamination was found to extend from just west of the loading rack area to approximately twenty feet east of the catwalk (bridge) and from the toe of the tank farm dike to the toe of the railroad bed. The vertical extent of the contamination is approximately two feet below ground surface to the top of the underlying clay layer.

W&C estimates the total volume of contaminated soil in this area to be 185 cubic yards (approximately 280 tons). This material would likely warrant removal and disposal. This remediation will be addressed in detail in the pending Remedial Action Plan.

AOC #5 – Chemical Manhole: Groundwater in the area of the chemical manhole contained slightly elevated levels of chlorinated hydrocarbons and solvents. The series of existing monitoring wells appear to delineate the extent of this contamination and show that the contamination is confined to a small area near the chemical manhole. It should be noted that this "contamination" does not exceed any applicable RSR criteria, and would exceed the volatilization criteria only if a building was placed over this area. In that event, the issue could be easily addressed through engineering controls.

Phase III investigations identified the presence of a leach field approximately six to eight feet directly below the chemical manhole and assumed to extend in all four directions away from the manhole. Soil sample results indicate the presence of TPH and low levels of VOCs. The leach field is the probable source of VOCs identified in the groundwater, as vinyl chloride and cis-1,2 dichloroethylene were detected in a soil sample collected from the leach field.

Materials associated with the leach field which warrant remediation consist of the leach field itself and associated soil. The extent of the leach field is estimated at 400 square feet with a depth of 8 feet. The estimated total volume of material to be addressed at the chemical manhole location is 120 cubic yards (approximately 180 tons). This will be described in further detail in the pending Remedial Action Plan.

AOC #6 – Aboveground Storage Tanks: Several soil samples collected from the area near the aboveground storage tanks were found to exceed RSR Direct Exposure Criteria for Total Petroleum Hydrocarbons (TPH). The area of contamination appeared to coincide with the visible staining observed on the ground surface, with the vertical extent ranging from four feet on the eastern edge to eight feet on the western edge.

W&C estimates the total volume of soil in the area of these tanks requiring remediation to be 45 cubic yards (approximately 67 tons). This issue will be addressed in further detail in the pending Remedial Action Plan.

This Phase II and Phase III Environmental Site Assessment was performed to investigate potential concerns associated with contamination of the soil and /or groundwater only. Although not discussed in this report, demolition/removal of tanks, piping, and associated materials is understood to be required as part of site remediation activities and will be included in the pending Remedial Action Plan.

APPENDIX

APPENDIX A
MONITORING WELL LOGS

CLIENT: WOODWARD & CURRAN
 PROJECT NAME: 680 NEWFIELD ST
 LOCATION: MIDDLETOWN, CT
 DRILLER: J. Yarrow
 INSPECTOR: F. Larsen
 DATE START: 7-1-98
 DATE FINISH: 7-1-98

NEW ENGLAND BORING CONTRACTORS OF CT., INC.



129 KRIEGER LANE
 GLASTONBURY, CT 06033
 (860) 633-4649 -- (413) 733-1232
 FAX (860) 657-8046

BORING No. MW-201

SHEET 1 OF 1

ARCHITECT/
 ENGINEER

FILE NO. W&CMIDDL

SURFACE ELEV.

LINE & STATION


OFFSET

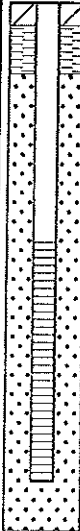
	Casing	Sampler	Core Barrel
TYPE	HSA	SS	
SIZE I.D.	4-1/4"	1-3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

SAMPLE						CASING BLOWS/ CORING TIMES PER FT.	FIELD CLASSIFICATION AND REMARKS	Well Cons.	Installation Details	
No.	DEPTH RANGE IN FEET	BLOWS PER 6" ON SAMPLER								REC.
		0-6	6-12	12-18	18-24					
S1	0'-2'	1	1	2	2	20"	Red/Brown Silt, Little Fine - Medium Sand <			

NOTES: 1) The stratification lines represent the approximate boundary between soil types. Transitions may be gradual.
 2) Water level readings have been made in the drill holes at times and under conditions stated on the boring logs. Fluctuations in the level of ground-water may occur due to factors other than those present at the time measurements were made.

REMARKS:

CLIENT: WOODWARD & CURRAN PROJECT NAME: 680 NEWFIELD ST LOCATION: MIDDLETOWN, CT DRILLER: J. Yarrow INSPECTOR: F. Larsen DATE START: 7-1-98 DATE FINISH: 7-1-98	NEW ENGLAND BORING CONTRACTORS OF CT., INC.  129 KRIEGER LANE GLASTONBURY, CT 06033 (860) 633-4649 -- (413) 733-1232 FAX (860) 657-8046	BORING No. MW-202 SHEET 1 OF 1 ARCHITECT/ ENGINEER FILE NO. W&CMIDDL SURFACE ELEV. LINE & STATION OFFSET																				
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;">TYPE</td> <td style="width:33%;">Casing</td> <td style="width:33%;">Sampler</td> <td style="width:33%;">Core Barrel</td> </tr> <tr> <td>SIZE I.D.</td> <td>HSA</td> <td>SS</td> <td></td> </tr> <tr> <td>HAMMER WT.</td> <td>4-1/4"</td> <td>1-3/8"</td> <td></td> </tr> <tr> <td>HAMMER FALL</td> <td></td> <td>140</td> <td></td> </tr> <tr> <td></td> <td></td> <td>30"</td> <td></td> </tr> </table>	TYPE	Casing	Sampler	Core Barrel	SIZE I.D.	HSA	SS		HAMMER WT.	4-1/4"	1-3/8"		HAMMER FALL		140				30"		
TYPE	Casing	Sampler	Core Barrel																			
SIZE I.D.	HSA	SS																				
HAMMER WT.	4-1/4"	1-3/8"																				
HAMMER FALL		140																				
		30"																				

SAMPLE						CASING BLOWS/ CORING TIMES PER FT.	FIELD CLASSIFICATION AND REMARKS	Well Cons.	Installation Details
No.	DEPTH RANGE IN FEET	BLOWS PER 6" ON SAMPLER							
		0-6	6-12	12-18	18-24				
S1	0'-2'	8	21	25	26	12"	Red/Brown, Fine - Medium Sand, Little Fine Gravel, Little Silt Red/Brown Clay		Roadway Box
S2	2'-4'	16	8	7	11	13"			10' of 2" PVC Riser
S3	4'-6'	2	6	4	4	14"			2' Bentonite Chip Seal
S4	6'-8'	5	5	7	10	0"			
S5	8'-10'	4	4	4	6	24"			
S6	10'-12'	2	4	3	4	24"			
S7	12'-14'	4	5	4	5	22"			10' of .010 Slot 2" PVC Screen
S8	15'-17'	2	3	3	4	24"			NJ #2 Sand
S9	20'-22'	6	7	7	7	6"	End of Boring @ 22' Water @ 4' +/-	Bottom of Well @ 20'	

NOTES: 1) The stratification lines represent the approximate boundary between soil types. Transitions may be gradual. 2) Water level readings have been made in the drill holes at times and under conditions stated on the boring logs. Fluctuations in the level of ground-water may occur due to factors other than those present at the time measurements were made.	REMARKS:
---	----------

CLIENT: WOODWARD & CURRAN

PROJECT NAME: 680 NEWFIELD ST

LOCATION: MIDDLETOWN, CT

DRILLER: J. Yarrow

INSPECTOR: F. Larsen

DATE START: 7-1-98

DATE FINISH: 7-1-98

NEW ENGLAND BORING CONTRACTORS OF CT., INC.



129 KRIEGER LANE
GLASTONBURY, CT 06033
(860) 633-4649 -- (413) 733-1232
FAX (860) 657-8046

BORING No. MW-203

SHEET 1 OF 1

ARCHITECT/
ENGINEER

FILE NO. W&CMIDDL

SURFACE ELEV.

LINE & STATION

OFFSET

	Casing	Sampler	Core Barrel
TYPE	HSA	SS	
SIZE I.D.	4-1/4"	1-3/8"	
HAMMER WT.		140#	
HAMMER FALL		30"	

		SAMPLE						OFFSET		
No.	DEPTH RANGE IN FEET	BLOWS PER 6" ON SAMPLER				REC.	CASING BLOWS/ CORING TIMES PER FT.	FIELD CLASSIFICATION AND REMARKS	Well Cons.	Installation Details
		0-6	6-12	12-18	18-24					
S1	0'-2'	4	1	3	1	2"		Black Organic Silt		Locking Protector Pipe 5' of 2" PVC Riser 1' Bentonite Chip Seal 10' of .010 Slot 2" PVC Screen NJ #2 Sand Bottom of Well @ 13'
S2	2'-4'	4	3	6	7	18"		Red Brown Clay, Some Silt		
S3	4'-6'	3	3	3	4	24"				
S4	6'-8'	4	4	5	5	24"				
S5	10'-12'	1	2	2	3	24"				
								End of Boring @ 13' Water @ Surface		

13

Locking
Protector Pipe
5' of 2" PVC
Riser
1' Bentonite
Chip Seal
10' of .010
Slot 2" PVC
Screen
NJ #2 Sand

Bottom of Well
@ 13'

NOTES: 1) The stratification lines represent the approximate boundary between soil types. Transitions may be gradual.

2) Water level readings have been made in the drill holes at times and under conditions stated on the boring logs. Fluctuations in the level of ground-water may occur due to factors other than those present at the time measurements were made.

REMARKS:

CLIENT: WOODWARD & CURRAN

PROJECT NAME: 680 NEWFIELD ST

LOCATION: MIDDLETOWN, CT

DRILLER: J. Yarrow

INSPECTOR: F. Larsen

DATE START: 7-1-98

DATE FINISH: 7-1-98

NEW ENGLAND BORING CONTRACTORS OF CT., INC.



129 KRIEGER LANE
GLASTONBURY, CT 06033
(860) 633-4649 -- (413) 733-1232
FAX (860) 657-8046

BORING No. MW-204

SHEET 1 OF 1

ARCHITECT/
ENGINEER

FILE NO. W&CMIDDL

SURFACE ELEV.

LINE & STATION

OFFSET

	Casing	Sampler	Core Barrel
TYPE	HSA	SS	
SIZE I.D.	4-1/4"	1-3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

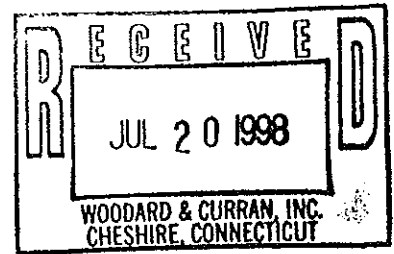
No.	DEPTH RANGE IN FEET	SAMPLE BLOWS PER 6" ON SAMPLER				REC.	CASING BLOWS/ CORING TIMES PER FT.	FIELD CLASSIFICATION AND REMARKS	Well Cons.	Installation Details
		0-6	6-12	12-18	18-24					
S1	0'-2'	1	2	4	5	15"		Red/Brown Silt, Little Fine Sand, Trace of Fine Gravel		
S2	2'-4'	4	4	4	4	20"				
S3	4'-6'	2	3	2	1	10"				
S4	6'-8'	1	1	7	10	24"		Red/Brown, Fine - Medium Sand, Some Silt	6	
S5	8'-10'	4	5	6	6	3"		Red/Brown Clay, Some Silt	8	
S6	10'-12'	3	4	4	5					
S7	12'-14'	5	6	8	10	18"			14	
								End of Boring @ 14' Water @ 4' +/-		Bottom of Well @ 14'

NOTES: 1) The stratification lines represent the approximate boundary between soil types. Transitions may be gradual.

2) Water level readings have been made in the drill holes at times and under conditions stated on the boring logs. Fluctuations in the level of ground-water may occur due to factors other than those present at the time measurements were made.

REMARKS:

APPENDIX B
PHASE II ANALYTICAL RESULTS



911 Bridgeport Avenue
900 Shelton Plaza
Shelton, CT 06484

July 7, 1998

Mr. Fred Larsen
Woodard & Curran
515 Highland Ave.
Cheshire, CT 06410

Tel: (203) 925-1133
Fax: (203) 925-1140
e-mail: comenvtst@aol.com

RE: Analysis of 18 soil and 2 water samples collected 7/1 &
7/2/98.
PROJECT: 98053.01, Middletown
CET #: 98-4560

The samples were analyzed for the parameters listed on the
following pages.

Please call us if you have any questions.

David Ditta
Laboratory Director

CLIENT: Woodard & Curran
PROJECT: 98053.01
CET #: 98-4560

<u>Total Metals:</u>	<u>AOC1C</u>	<u>AOC1D</u>	<u>AOC7A</u>	<u>AOC7B</u>
Pb	5.9	8.3	11	28
Cd	ND<1.0	ND<1.0	ND<1.0	1.5
Cr	12	14	20	20
As	ND<2.0	ND<2.0	ND<2.0	3.4
Se	ND<1.0	ND<1.0	ND<1.0	ND<1.0
Hg	ND<0.20	ND<0.20	ND<0.20	ND<0.20
Ba	75	620	120	78
Ag	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Cu	12	15	12	23
Ni	14	15	16	16
<u>SPLP Metals:</u>				
Pb	ND<0.013	ND<0.013	ND<0.013	ND<0.013
Cd	ND<0.005	ND<0.005	ND<0.005	ND<0.005
Cr	ND<0.05	ND<0.05	ND<0.05	ND<0.05
As	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Se	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Hg	ND<0.002	ND<0.002	ND<0.002	ND<0.002
Ba	0.49	0.58	0.38	0.32
Ag	ND<0.02	ND<0.02	ND<0.02	ND<0.02
Cu	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Ni	ND<0.05	ND<0.05	ND<0.05	ND<0.05
TPH (418.1)	<50	<50	<50	87
Cyanide	ND<5.0	ND<5.0	ND<5.0	ND<5.0

<u>Total Metals:</u>	<u>AOC1E</u>	<u>Duplicate</u>	<u>AOC5</u>	<u>MW202-S3</u>
Pb	7.6	29	20	6.0
Cd	ND<1.0	1.7	ND<1.0	ND<1.0
Cr	15	12	310	19
As	ND<2.0	2.1	ND<2.0	3.6
Se	ND<1.0	ND<1.0	ND<1.0	ND<1.0
Hg	ND<0.20	ND<0.20	ND<0.20	ND<0.20
Ba	92	92	47	130
Ag	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Cu	15	21	82	20
Ni	17	12	11	23
<u>SPLP Metals:</u>				
Pb	ND<0.013	ND<0.013	ND<0.013	ND<0.013
Cd	ND<0.005	ND<0.005	ND<0.005	ND<0.005
Cr	ND<0.05	ND<0.05	0.07	ND<0.05
As	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Se	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Hg	ND<0.002	ND<0.002	ND<0.002	ND<0.002
Ba	1.4	0.37	0.46	0.69
Ag	ND<0.02	ND<0.02	ND<0.02	ND<0.02
Cu	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Ni	ND<0.05	ND<0.05	ND<0.05	ND<0.05
TPH (418.1)	<50	70	71	<50
Cyanide	ND<5.0	ND<5.0	ND<5.0	ND<5.0

CLIENT: Woodard & Curran
PROJECT: 98053.01
CET #: 98-4560

<u>Total Metals:</u>	<u>AOC6A</u>	<u>AOC6B</u>	<u>AOC2A</u>	<u>AOC2B</u>
Pb	10	81	33	37
Cd	ND<1.0	1.4	2.4	2.1
Cr	10	13	19	23
As	ND<2.0	7.8	4.6	2.7
Se	ND<1.0	ND<1.0	ND<1.0	ND<1.0
Hg	ND<0.20	ND<0.20	ND<0.20	ND<0.20
Ba	68	89	120	180
Ag	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Cu	58	32	64	73
Ni	17	19	25	34

<u>SPLP Metals:</u>				
Pb	ND<0.013	ND<0.013	ND<0.013	ND<0.013
Cd	ND<0.005	ND<0.005	ND<0.005	ND<0.005
Cr	ND<0.05	ND<0.05	ND<0.05	ND<0.05
As	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Se	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Hg	ND<0.002	ND<0.002	ND<0.002	ND<0.002
Ba	0.40	0.49	0.31	0.31
Ag	ND<0.02	ND<0.02	ND<0.02	ND<0.02
Cu	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Ni	ND<0.05	ND<0.05	ND<0.05	ND<0.05
TPH (418.1)	1700	880	1200	2700
Cyanide	63	ND<5.0	ND<5.0	ND<5.0

<u>Total Metals:</u>	<u>AOC2C</u>	<u>AOC2D</u>	<u>AOC1A</u>	<u>AOC1B</u>
Pb	27	97	6.1	6.5
Cd	1.5	2.3	ND<1.0	ND<1.0
Cr	21	32	10	11
As	ND<2.0	8.9	ND<2.0	ND<2.0
Se	ND<1.0	ND<1.0	ND<1.0	ND<1.0
Hg	ND<0.20	ND<0.20	ND<0.20	ND<0.20
Ba	180	390	61	99
Ag	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Cu	76	71	11	19
Ni	27	28	12	14

<u>SPLP Metals:</u>				
Pb	ND<0.013	ND<0.013	ND<0.013	ND<0.013
Cd	ND<0.005	ND<0.005	ND<0.005	ND<0.005
Cr	ND<0.05	ND<0.05	ND<0.05	ND<0.05
As	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Se	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Hg	ND<0.002	ND<0.002	ND<0.002	ND<0.002
Ba	0.40	0.35	0.46	0.49
Ag	ND<0.02	ND<0.02	ND<0.02	ND<0.02
Cu	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Ni	ND<0.05	ND<0.05	ND<0.05	ND<0.05
TPH (418.1)	3000	10000	<50	<50
Cyanide	ND<5.0	ND<5.0	ND<5.0	ND<5.0

CLIENT: Woodard & Curran
PROJECT: 98053.01
CET #: 98-4560

<u>Total Metals:</u>	<u>MW204-S3</u>	<u>MW203-S3</u>	<u>Trip Blank</u>	<u>Eq. Blank</u>
Pb	7.9	6.7	ND<2.0	ND<2.0
Cd	ND<1.0	ND<1.0	ND<1.0	ND<1.0
Cr	13	20	ND<2.0	ND<2.0
As	ND<2.0	2.1	ND<2.0	ND<2.0
Se	ND<1.0	ND<1.0	ND<1.0	ND<1.0
Hg	ND<0.20	ND<0.20	ND<0.20	ND<0.20
Ba	55	140	ND<2.0	ND<2.0
Ag	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Cu	8.9	17	ND<2.0	ND<2.0
Ni	12	22	ND<2.0	ND<2.0
<u>SPLP Metals:</u>				
Pb	ND<0.013	ND<0.013	---	---
Cd	ND<0.005	ND<0.005	---	---
Cr	ND<0.05	ND<0.05	---	---
As	ND<0.05	ND<0.05	---	---
Se	ND<0.01	ND<0.01	---	---
Hg	ND<0.002	ND<0.002	---	---
Ba	0.38	0.38	---	---
Ag	ND<0.02	ND<0.02	---	---
Cu	ND<0.05	ND<0.05	---	---
Ni	ND<0.05	ND<0.05	---	---
TPH (418.1)	<50	<50	<0.50	<0.50
Cyanide	ND<5.0	ND<5.0	ND<0.10	ND<0.10

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4560

MATRIX: soil
UNITS: ppb
DATE ANALYZED: 7/7/98

	AOC1A	AOC1B	AOC1C	DETECTION LIMIT
BENZENE	ND	ND	ND	5.0
BROMOBENZENE	ND	ND	ND	10.0
BROMOCHLOROMETHANE	ND	ND	ND	5.0
BROMODICHLOROMETHANE	ND	ND	ND	5.0
BROMOFORM	ND	ND	ND	10.0
BROMOMETHANE	ND	ND	ND	25.0
n-BUTYLBENZENE	ND	ND	ND	5.0
sec-BUTYLBENZENE	ND	ND	ND	5.0
tert-BUTYLBENZENE	ND	ND	ND	5.0
CARBON TETRACHLORIDE	ND	ND	ND	5.0
CHLOROBENZENE	ND	ND	ND	5.0
CHLOROETHANE	ND	ND	ND	25.0
CHLOROFORM	ND	ND	ND	5.0
CHLOROMETHANE	ND	ND	ND	25.0
2-CHLOROTOLUENE	ND	ND	ND	5.0
4-CHLOROTOLUENE	ND	ND	ND	5.0
DIBROMOCHLOROMETHANE	ND	ND	ND	5.0
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	ND	10.0
1,2-DIBROMOETHANE	ND	ND	ND	5.0
DIBROMOMETHANE	ND	ND	ND	10.0
1,2-DICHLOROBENZENE	ND	ND	ND	5.0
1,3-DICHLOROBENZENE	ND	ND	ND	5.0
1,4-DICHLOROBENZENE	ND	ND	ND	5.0
DICHLORODIFLUOROMETHANE	ND	ND	ND	25.0
1,1-DICHLOROETHANE	ND	ND	ND	5.0
1,2-DICHLOROETHANE	ND	ND	ND	5.0
1,1-DICHLOROETHYLENE	ND	ND	ND	5.0
cis-1,2-DICHLOROETHYLENE	ND	ND	ND	5.0
trans-1,2-DICHLOROETHYLENE	ND	ND	ND	5.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4560

MATRIX: soil
UNITS: ppb
DATE ANALYZED: 7/7/98

	AOC1A	AOC1B	AOC1C	DETECTION LIMIT
1,2-DICHLOROPROPANE	ND	ND	ND	5.0
1,3-DICHLOROPROPANE	ND	ND	ND	5.0
2,2-DICHLOROPROPANE	ND	ND	ND	5.0
1,1-DICHLOROPROPENE	ND	ND	ND	5.0
ETHYLBENZENE	ND	ND	ND	5.0
HEXACHLOROBUTADIENE	ND	ND	ND	5.0
ISOPROPYLBENZENE	ND	ND	ND	5.0
4-ISOPROPYLTOLUENE	ND	ND	ND	5.0
METHYLENE CHLORIDE	ND	ND	ND	10.0
NAPHTHALENE	ND	ND	ND	5.0
n-PROPYLBENZENE	ND	ND	ND	5.0
STYRENE	ND	ND	ND	5.0
1,1,1,2-TETRACHLOROETHANE	ND	ND	ND	5.0
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	5.0
TETRACHLOROETHYLENE	ND	ND	ND	5.0
TOLUENE	ND	ND	ND	5.0
1,2,3-TRICHLOROBENZENE	ND	ND	ND	5.0
1,2,4-TRICHLOROBENZENE	ND	ND	ND	5.0
1,1,1-TRICHLOROETHANE	ND	ND	ND	5.0
1,1,2-TRICHLOROETHANE	ND	ND	ND	5.0
TRICHLOROETHYLENE	ND	ND	ND	5.0
TRICHLOROFLUOROMETHANE	ND	ND	ND	5.0
1,2,3-TRICHLOROPROPANE	ND	ND	ND	5.0
1,2,4-TRIMETHYLBENZENE	ND	ND	20	5.0
1,3,5-TRIMETHYLBENZENE	ND	ND	8.2	5.0
VINYL CHLORIDE	ND	ND	ND	10.0
o-XYLENE	ND	ND	ND	5.0
m+p-XYLENES	ND	ND	16	5.0
MTBE	ND	ND	ND	10.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4560

MATRIX: soil
UNITS: ppb
DATE ANALYZED: 7/8/98

	AOC1D	AOC7A	AOC7B	DETECTION LIMIT
BENZENE	ND	ND	ND	5.0
BROMOBENZENE	ND	ND	ND	10.0
BROMOCHLOROMETHANE	ND	ND	ND	5.0
BROMODICHLOROMETHANE	ND	ND	ND	5.0
BROMOFORM	ND	ND	ND	10.0
BROMOMETHANE	ND	ND	ND	25.0
n-BUTYLBENZENE	ND	ND	ND	5.0
sec-BUTYLBENZENE	ND	ND	ND	5.0
tert-BUTYLBENZENE	ND	ND	ND	5.0
CARBON TETRACHLORIDE	ND	ND	ND	5.0
CHLOROBENZENE	ND	ND	ND	5.0
CHLOROETHANE	ND	ND	ND	25.0
CHLOROFORM	ND	ND	ND	5.0
CHLOROMETHANE	ND	ND	ND	25.0
2-CHLOROTOLUENE	ND	ND	ND	5.0
4-CHLOROTOLUENE	ND	ND	ND	5.0
DIBROMOCHLOROMETHANE	ND	ND	ND	5.0
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	ND	10.0
1,2-DIBROMOETHANE	ND	ND	ND	5.0
DIBROMOMETHANE	ND	ND	ND	10.0
1,2-DICHLOROBENZENE	ND	ND	ND	5.0
1,3-DICHLOROBENZENE	ND	ND	ND	5.0
1,4-DICHLOROBENZENE	ND	ND	ND	5.0
DICHLORODIFLUOROMETHANE	ND	ND	ND	25.0
1,1-DICHLOROETHANE	ND	ND	ND	5.0
1,2-DICHLOROETHANE	ND	ND	ND	5.0
1,1-DICHLOROETHYLENE	ND	ND	ND	5.0
cis-1,2-DICHLOROETHYLENE	ND	ND	ND	5.0
trans-1,2-DICHLOROETHYLENE	ND	ND	ND	5.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4560

MATRIX: soil
UNITS: ppb
DATE ANALYZED: 7/8/98

	AOC1D	AOC7A	AOC7B	DETECTION LIMIT
1,2-DICHLOROPROPANE	ND	ND	ND	5.0
1,3-DICHLOROPROPANE	ND	ND	ND	5.0
2,2-DICHLOROPROPANE	ND	ND	ND	5.0
1,1-DICHLOROPROPENE	ND	ND	ND	5.0
ETHYLBENZENE	ND	ND	ND	5.0
HEXACHLOROBUTADIENE	ND	ND	ND	5.0
ISOPROPYLBENZENE	ND	ND	ND	5.0
4-ISOPROPYLTOLUENE	ND	ND	ND	5.0
METHYLENE CHLORIDE	ND	ND	ND	10.0
NAPHTHALENE	ND	ND	ND	5.0
n-PROPYLBENZENE	ND	ND	ND	5.0
STYRENE	ND	ND	ND	5.0
1,1,1,2-TETRACHLOROETHANE	ND	ND	ND	5.0
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	5.0
TETRACHLOROETHYLENE	ND	ND	ND	5.0
TOLUENE	ND	ND	ND	5.0
1,2,3-TRICHLOROBENZENE	ND	ND	ND	5.0
1,2,4-TRICHLOROBENZENE	ND	ND	ND	5.0
1,1,1-TRICHLOROETHANE	ND	ND	ND	5.0
1,1,2-TRICHLOROETHANE	ND	ND	ND	5.0
TRICHLOROETHYLENE	ND	ND	ND	5.0
TRICHLOROFLUOROMETHANE	ND	ND	ND	5.0
1,2,3-TRICHLOROPROPANE	ND	ND	ND	5.0
1,2,4-TRIMETHYLBENZENE	ND	ND	ND	5.0
1,3,5-TRIMETHYLBENZENE	ND	ND	ND	5.0
VINYL CHLORIDE	ND	ND	ND	10.0
o-XYLENE	ND	ND	ND	5.0
m+p-XYLENES	ND	ND	ND	5.0
MTBE	ND	ND	ND	10.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4560

MATRIX: soil
UNITS: ppb
DATE ANALYZED: 7/8/98

	AOC1E	Duplicate	AOC5	DETECTION LIMIT
BENZENE	ND	ND	ND	5.0
BROMOBENZENE	ND	ND	ND	10.0
BROMOCHLOROMETHANE	ND	ND	ND	5.0
BROMODICHLOROMETHANE	ND	ND	ND	5.0
BROMOFORM	ND	ND	ND	10.0
BROMOMETHANE	ND	ND	ND	25.0
n-BUTYLBENZENE	ND	ND	ND	5.0
sec-BUTYLBENZENE	ND	ND	ND	5.0
tert-BUTYLBENZENE	ND	ND	ND	5.0
CARBON TETRACHLORIDE	ND	ND	ND	5.0
CHLOROBENZENE	ND	ND	ND	5.0
CHLOROETHANE	ND	ND	ND	25.0
CHLOROFORM	ND	ND	ND	5.0
CHLOROMETHANE	ND	ND	ND	25.0
2-CHLOROTOLUENE	ND	ND	ND	5.0
4-CHLOROTOLUENE	ND	ND	ND	5.0
DIBROMOCHLOROMETHANE	ND	ND	ND	5.0
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	ND	10.0
1,2-DIBROMOETHANE	ND	ND	ND	5.0
DIBROMOMETHANE	ND	ND	ND	10.0
1,2-DICHLOROBENZENE	ND	ND	ND	5.0
1,3-DICHLOROBENZENE	ND	ND	ND	5.0
1,4-DICHLOROBENZENE	ND	ND	ND	5.0
DICHLORODIFLUOROMETHANE	ND	ND	ND	25.0
1,1-DICHLOROETHANE	ND	ND	ND	5.0
1,2-DICHLOROETHANE	ND	ND	ND	5.0
1,1-DICHLOROETHYLENE	ND	ND	ND	5.0
cis-1,2-DICHLOROETHYLENE	ND	ND	ND	5.0
trans-1,2-DICHLOROETHYLENE	ND	ND	ND	5.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4560

MATRIX: soil
UNITS: ppb
DATE ANALYZED: 7/8/98

	AOC1E	Duplicate	AOC5	DETECTION LIMIT
1,2-DICHLOROPROPANE	ND	ND	ND	5.0
1,3-DICHLOROPROPANE	ND	ND	ND	5.0
2,2-DICHLOROPROPANE	ND	ND	ND	5.0
1,1-DICHLOROPROPENE	ND	ND	ND	5.0
ETHYLBENZENE	ND	ND	ND	5.0
HEXACHLOROBUTADIENE	ND	ND	ND	5.0
ISOPROPYLBENZENE	ND	ND	ND	5.0
4-ISOPROPYLTOLUENE	ND	ND	ND	5.0
METHYLENE CHLORIDE	ND	ND	ND	10.0
NAPHTHALENE	ND	ND	ND	5.0
n-PROPYLBENZENE	ND	ND	ND	5.0
STYRENE	ND	ND	ND	5.0
1,1,1,2-TETRACHLOROETHANE	ND	ND	ND	5.0
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	5.0
TETRACHLOROETHYLENE	ND	ND	ND	5.0
TOLUENE	ND	ND	ND	5.0
1,2,3-TRICHLOROBENZENE	ND	ND	ND	5.0
1,2,4-TRICHLOROBENZENE	ND	ND	ND	5.0
1,1,1-TRICHLOROETHANE	ND	ND	ND	5.0
1,1,2-TRICHLOROETHANE	ND	ND	ND	5.0
TRICHLOROETHYLENE	ND	ND	ND	5.0
TRICHLOROFLUOROMETHANE	ND	ND	ND	5.0
1,2,3-TRICHLOROPROPANE	ND	ND	ND	5.0
1,2,4-TRIMETHYLBENZENE	ND	ND	ND	5.0
1,3,5-TRIMETHYLBENZENE	ND	ND	ND	5.0
VINYL CHLORIDE	ND	ND	ND	10.0
o-XYLENE	ND	ND	ND	5.0
m+p-XYLENES	ND	ND	ND	5.0
MTBE	ND	ND	ND	10.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4560

MATRIX: soil
UNITS: ppb
DATE ANALYZED: 7/8/98

	AOC6A	AOC2A	DETECTION LIMIT
BENZENE	ND	ND	50
BROMOBENZENE	ND	ND	100
BROMOCHLOROMETHANE	ND	ND	50
BROMODICHLOROMETHANE	ND	ND	50
BROMOFORM	ND	ND	100
BROMOMETHANE	ND	ND	250
n-BUTYLBENZENE	ND	ND	50
sec-BUTYLBENZENE	ND	ND	50
tert-BUTYLBENZENE	ND	ND	50
CARBON TETRACHLORIDE	ND	ND	50
CHLOROBENZENE	ND	ND	50
CHLOROETHANE	ND	ND	250
CHLOROFORM	ND	ND	50
CHLOROMETHANE	ND	ND	250
2-CHLOROTOLUENE	ND	ND	50
4-CHLOROTOLUENE	ND	ND	50
DIBROMOCHLOROMETHANE	ND	ND	50
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	100
1,2-DIBROMOETHANE	ND	ND	50
DIBROMOMETHANE	ND	ND	100
1,2-DICHLOROBENZENE	ND	ND	50
1,3-DICHLOROBENZENE	ND	ND	50
1,4-DICHLOROBENZENE	ND	ND	50
DICHLORODIFLUOROMETHANE	ND	ND	250
1,1-DICHLOROETHANE	ND	ND	50
1,2-DICHLOROETHANE	ND	ND	50
1,1-DICHLOROETHYLENE	ND	150	50
cis-1,2-DICHLOROETHYLENE	ND	46000	50
trans-1,2-DICHLOROETHYLENE	ND	ND	50

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4560

MATRIX: soil
UNITS: ppb
DATE ANALYZED: 7/8/98

	AOC6A	AOC2A	DETECTION LIMIT
1,2-DICHLOROPROPANE	ND	ND	50
1,3-DICHLOROPROPANE	ND	ND	50
2,2-DICHLOROPROPANE	ND	ND	50
1,1-DICHLOROPROPENE	ND	ND	50
ETHYL BENZENE	ND	67000	50
HEXACHLOROBUTADIENE	ND	ND	50
ISOPROPYLBENZENE	ND	1100	50
4-ISOPROPYLTOLUENE	ND	ND	50
METHYLENE CHLORIDE	ND	ND	100
NAPHTHALENE	ND	ND	50
n-PROPYLBENZENE	ND	340	50
STYRENE	ND	ND	50
1,1,1,2-TETRACHLOROETHANE	ND	ND	50
1,1,2,2-TETRACHLOROETHANE	ND	ND	50
TETRACHLOROETHYLENE	64	120000	50
TOLUENE	ND	190000	50
1,2,3-TRICHLOROBENZENE	ND	ND	50
1,2,4-TRICHLOROBENZENE	ND	ND	50
1,1,1-TRICHLOROETHANE	ND	ND	50
1,1,2-TRICHLOROETHANE	ND	ND	50
TRICHLOROETHYLENE	ND	9100	50
TRICHLOROFLUOROMETHANE	ND	ND	50
1,2,3-TRICHLOROPROPANE	ND	ND	50
1,2,4-TRIMETHYLBENZENE	ND	150	50
1,3,5-TRIMETHYLBENZENE	ND	170	50
VINYL CHLORIDE	ND	1100	100
o-XYLENE	ND	64000	50
m+p-XYLENES	ND	260000	50
MTBE	ND	ND	100

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4560

MATRIX: soil
UNITS: ppb
DATE ANALYZED: 7/8/98

	AOC2C	AOC2D	DETECTION LIMIT
BENZENE	ND	ND	50
BROMOBENZENE	ND	ND	100
BROMOCHLOROMETHANE	ND	ND	50
BROMODICHLOROMETHANE	ND	ND	50
BROMOFORM	ND	ND	100
BROMOMETHANE	ND	ND	250
n-BUTYLBENZENE	ND	ND	50
sec-BUTYLBENZENE	ND	ND	50
tert-BUTYLBENZENE	ND	ND	50
CARBON TETRACHLORIDE	ND	ND	50
CHLOROBENZENE	ND	ND	50
CHLOROETHANE	ND	ND	250
CHLOROFORM	ND	ND	50
CHLOROMETHANE	ND	ND	250
2-CHLOROTOLUENE	ND	ND	50
4-CHLOROTOLUENE	ND	ND	50
DIBROMOCHLOROMETHANE	ND	ND	50
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	100
1,2-DIBROMOETHANE	ND	ND	50
DIBROMOMETHANE	ND	ND	100
1,2-DICHLOROBENZENE	ND	ND	50
1,3-DICHLOROBENZENE	ND	ND	50
1,4-DICHLOROBENZENE	ND	ND	50
DICHLORODIFLUOROMETHANE	ND	ND	250
1,1-DICHLOROETHANE	ND	ND	50
1,2-DICHLOROETHANE	ND	ND	50
1,1-DICHLOROETHYLENE	ND	ND	50
cis-1,2-DICHLOROETHYLENE	ND	ND	50
trans-1,2-DICHLOROETHYLENE	ND	ND	50

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4560

MATRIX: soil
UNITS: ppb
DATE ANALYZED: 7/8/98

	AOC2C	AOC2D	DETECTION LIMIT
1,2-DICHLOROPROPANE	ND	ND	50
1,3-DICHLOROPROPANE	ND	ND	50
2,2-DICHLOROPROPANE	ND	ND	50
1,1-DICHLOROPROPENE	ND	ND	50
ETHYL BENZENE	96	ND	50
HEXACHLOROBUTADIENE	ND	ND	50
ISOPROPYLBENZENE	ND	ND	50
4-ISOPROPYLTOLUENE	ND	ND	50
METHYLENE CHLORIDE	ND	ND	100
NAPHTHALENE	ND	ND	50
n-PROPYLBENZENE	ND	ND	50
STYRENE	ND	ND	50
1,1,1,2-TETRACHLOROETHANE	ND	ND	50
1,1,2,2-TETRACHLOROETHANE	ND	ND	50
TETRACHLOROETHYLENE	ND	ND	50
TOLUENE	470	ND	50
1,2,3-TRICHLOROBENZENE	ND	ND	50
1,2,4-TRICHLOROBENZENE	ND	ND	50
1,1,1-TRICHLOROETHANE	ND	ND	50
1,1,2-TRICHLOROETHANE	ND	ND	50
TRICHLOROETHYLENE	ND	ND	50
TRICHLOROFLUOROMETHANE	ND	ND	50
1,2,3-TRICHLOROPROPANE	ND	ND	50
1,2,4-TRIMETHYLBENZENE	ND	ND	50
1,3,5-TRIMETHYLBENZENE	ND	ND	50
VINYL CHLORIDE	ND	ND	100
o-XYLENE	310	ND	50
m+p-XYLENES	850	ND	50
MTBE	ND	ND	100

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4560

MATRIX: soil
UNITS: ppb
DATE ANALYZED: 7/8/98

	AOC6B	AOC2B	DETECTION LIMIT
BENZENE	ND	ND	5.0
BROMOBENZENE	ND	ND	10.0
BROMOCHLOROMETHANE	ND	ND	5.0
BROMODICHLOROMETHANE	ND	ND	5.0
BROMOFORM	ND	ND	10.0
BROMOMETHANE	ND	ND	25.0
n-BUTYLBENZENE	ND	ND	5.0
sec-BUTYLBENZENE	ND	ND	5.0
tert-BUTYLBENZENE	ND	ND	5.0
CARBON TETRACHLORIDE	ND	ND	5.0
CHLOROBENZENE	ND	ND	5.0
CHLOROETHANE	ND	ND	25.0
CHLOROFORM	ND	ND	5.0
CHLOROMETHANE	ND	ND	25.0
2-CHLOROTOLUENE	ND	ND	5.0
4-CHLOROTOLUENE	ND	ND	5.0
DIBROMOCHLOROMETHANE	ND	ND	5.0
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	10.0
1,2-DIBROMOETHANE	ND	ND	5.0
DIBROMOMETHANE	ND	ND	10.0
1,2-DICHLOROBENZENE	ND	ND	5.0
1,3-DICHLOROBENZENE	ND	ND	5.0
1,4-DICHLOROBENZENE	ND	ND	5.0
DICHLORODIFLUOROMETHANE	ND	ND	25.0
1,1-DICHLOROETHANE	ND	ND	5.0
1,2-DICHLOROETHANE	ND	ND	5.0
1,1-DICHLOROETHYLENE	ND	ND	5.0
cis-1,2-DICHLOROETHYLENE	ND	ND	5.0
trans-1,2-DICHLOROETHYLENE	ND	ND	5.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4560

MATRIX: soil
UNITS: ppb
DATE ANALYZED: 7/8/98

	AOC6B	AOC2B	DETECTION LIMIT
1,2-DICHLOROPROPANE	ND	ND	5.0
1,3-DICHLOROPROPANE	ND	ND	5.0
2,2-DICHLOROPROPANE	ND	ND	5.0
1,1-DICHLOROPROPENE	ND	ND	5.0
ETHYL BENZENE	ND	120	5.0
HEXACHLOROBUTADIENE	ND	ND	5.0
ISOPROPYLBENZENE	ND	ND	5.0
4-ISOPROPYLTOLUENE	ND	ND	5.0
METHYLENE CHLORIDE	ND	ND	10.0
NAPHTHALENE	ND	ND	5.0
n-PROPYLBENZENE	ND	ND	5.0
STYRENE	ND	ND	5.0
1,1,1,2-TETRACHLOROETHANE	ND	ND	5.0
1,1,2,2-TETRACHLOROETHANE	ND	ND	5.0
TETRACHLOROETHYLENE	16	ND	5.0
TOLUENE	ND	150	5.0
1,2,3-TRICHLOROBENZENE	ND	ND	5.0
1,2,4-TRICHLOROBENZENE	ND	ND	5.0
1,1,1-TRICHLOROETHANE	ND	ND	5.0
1,1,2-TRICHLOROETHANE	ND	ND	5.0
TRICHLOROETHYLENE	ND	ND	5.0
TRICHLOROFLUOROMETHANE	ND	ND	5.0
1,2,3-TRICHLOROPROPANE	ND	ND	5.0
1,2,4-TRIMETHYLBENZENE	ND	ND	5.0
1,3,5-TRIMETHYLBENZENE	ND	ND	5.0
VINYL CHLORIDE	ND	ND	10.0
o-XYLENE	ND	ND	5.0
m+p-XYLENES	ND	2000	5.0
MTBE	ND	ND	10.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4560

MATRIX: soil
UNITS: ppb
DATE ANALYZED: 7/7/98

	MW202-S3	MW204-S3	MW203-S3	DETECTION LIMIT
BENZENE	ND	ND	ND	5.0
BROMOBENZENE	ND	ND	ND	10.0
BROMOCHLOROMETHANE	ND	ND	ND	5.0
BROMODICHLOROMETHANE	ND	ND	ND	5.0
BROMOFORM	ND	ND	ND	10.0
BROMOMETHANE	ND	ND	ND	25.0
n-BUTYLBENZENE	ND	ND	ND	5.0
sec-BUTYLBENZENE	ND	ND	ND	5.0
tert-BUTYLBENZENE	ND	ND	ND	5.0
CARBON TETRACHLORIDE	ND	ND	ND	5.0
CHLOROBENZENE	ND	ND	ND	5.0
CHLOROETHANE	ND	ND	ND	25.0
CHLOROFORM	ND	ND	ND	5.0
CHLOROMETHANE	ND	ND	ND	25.0
2-CHLOROTOLUENE	ND	ND	ND	5.0
4-CHLOROTOLUENE	ND	ND	ND	5.0
DIBROMOCHLOROMETHANE	ND	ND	ND	5.0
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	ND	10.0
1,2-DIBROMOETHANE	ND	ND	ND	5.0
DIBROMOMETHANE	ND	ND	ND	10.0
1,2-DICHLOROBENZENE	ND	ND	ND	5.0
1,3-DICHLOROBENZENE	ND	ND	ND	5.0
1,4-DICHLOROBENZENE	ND	ND	ND	5.0
DICHLORODIFLUOROMETHANE	ND	ND	ND	25.0
1,1-DICHLOROETHANE	ND	ND	ND	5.0
1,2-DICHLOROETHANE	ND	ND	ND	5.0
1,1-DICHLOROETHYLENE	ND	ND	ND	5.0
cis-1,2-DICHLOROETHYLENE	ND	ND	ND	5.0
trans-1,2-DICHLOROETHYLENE	ND	ND	ND	5.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4560

MATRIX: soil
UNITS: ppb
DATE ANALYZED: 7/7/98

	MW202-S3	MW204-S3	MW203-S3	DETECTION LIMIT
1,2-DICHLOROPROPANE	ND	ND	ND	5.0
1,3-DICHLOROPROPANE	ND	ND	ND	5.0
2,2-DICHLOROPROPANE	ND	ND	ND	5.0
1,1-DICHLOROPROPENE	ND	ND	ND	5.0
ETHYLBENZENE	ND	ND	ND	5.0
HEXACHLOROBUTADIENE	ND	ND	ND	5.0
ISOPROPYLBENZENE	ND	ND	ND	5.0
4-ISOPROPYLTOLUENE	ND	ND	ND	5.0
METHYLENE CHLORIDE	ND	ND	ND	10.0
NAPHTHALENE	ND	ND	ND	5.0
n-PROPYLBENZENE	ND	ND	ND	5.0
STYRENE	ND	ND	ND	5.0
1,1,1,2-TETRACHLOROETHANE	ND	ND	ND	5.0
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	5.0
TETRACHLOROETHYLENE	ND	ND	ND	5.0
TOLUENE	ND	ND	ND	5.0
1,2,3-TRICHLOROBENZENE	ND	ND	ND	5.0
1,2,4-TRICHLOROBENZENE	ND	ND	ND	5.0
1,1,1-TRICHLOROETHANE	ND	ND	ND	5.0
1,1,2-TRICHLOROETHANE	ND	ND	ND	5.0
TRICHLOROETHYLENE	ND	ND	ND	5.0
TRICHLOROFLUOROMETHANE	ND	ND	ND	5.0
1,2,3-TRICHLOROPROPANE	ND	ND	ND	5.0
1,2,4-TRIMETHYLBENZENE	ND	ND	ND	5.0
1,3,5-TRIMETHYLBENZENE	ND	ND	ND	5.0
VINYL CHLORIDE	ND	ND	ND	10.0
o-XYLENE	ND	ND	ND	5.0
m+p-XYLENES	ND	ND	ND	5.0
MTBE	ND	ND	ND	10.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4560

MATRIX: water
UNITS: ppb
DATE ANALYZED: 7/8/98

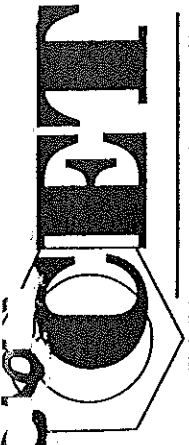
	Trip Blank	Eq. Blank	DETECTION LIMIT
BENZENE	ND	ND	1.0
BROMOBENZENE	ND	ND	5.0
BROMOCHLOROMETHANE	ND	ND	1.0
BROMODICHLOROMETHANE	ND	ND	1.0
BROMOFORM	ND	ND	5.0
BROMOMETHANE	ND	ND	10.0
n-BUTYLBENZENE	ND	ND	1.0
sec-BUTYLBENZENE	ND	ND	1.0
tert-BUTYLBENZENE	ND	ND	1.0
CARBON TETRACHLORIDE	ND	ND	1.0
CHLOROBENZENE	ND	ND	1.0
CHLOROETHANE	ND	ND	10.0
CHLOROFORM	ND	ND	1.0
CHLOROMETHANE	ND	ND	10.0
2-CHLOROTOLUENE	ND	ND	1.0
4-CHLOROTOLUENE	ND	ND	1.0
DIBROMOCHLOROMETHANE	ND	ND	1.0
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	5.0
1,2-DIBROMOETHANE	ND	ND	1.0
DIBROMOMETHANE	ND	ND	5.0
1,2-DICHLOROBENZENE	ND	ND	1.0
1,3-DICHLOROBENZENE	ND	ND	1.0
1,4-DICHLOROBENZENE	ND	ND	1.0
DICHLORODIFLUOROMETHANE	ND	ND	10.0
1,1-DICHLOROETHANE	ND	ND	1.0
1,2-DICHLOROETHANE	ND	ND	1.0
1,1-DICHLOROETHYLENE	ND	ND	1.0
cis-1,2-DICHLOROETHYLENE	ND	ND	1.0
trans-1,2-DICHLOROETHYLENE	ND	ND	1.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4560

MATRIX: water
UNITS: ppb
DATE ANALYZED: 7/8/98

	Trip Blank	Eq. Blank	DETECTION LIMIT
1,2-DICHLOROPROPANE	ND	ND	1.0
1,3-DICHLOROPROPANE	ND	ND	1.0
2,2-DICHLOROPROPANE	ND	ND	1.0
1,1-DICHLOROPROPENE	ND	ND	1.0
ETHYL BENZENE	ND	ND	1.0
HEXACHLOROBUTADIENE	ND	ND	1.0
ISOPROPYLBENZENE	ND	ND	1.0
4-ISOPROPYLTOLUENE	ND	ND	1.0
METHYLENE CHLORIDE	ND	ND	5.0
NAPHTHALENE	ND	ND	1.0
n-PROPYLBENZENE	ND	ND	1.0
STYRENE	ND	ND	1.0
1,1,1,2-TETRACHLOROETHANE	ND	ND	1.0
1,1,2,2-TETRACHLOROETHANE	ND	ND	1.0
TETRACHLOROETHYLENE	ND	ND	1.0
TOLUENE	ND	ND	1.0
1,2,3-TRICHLOROBENZENE	ND	ND	1.0
1,2,4-TRICHLOROBENZENE	ND	ND	1.0
1,1,1-TRICHLOROETHANE	ND	ND	1.0
1,1,2-TRICHLOROETHANE	ND	ND	1.0
TRICHLOROETHYLENE	ND	ND	1.0
TRICHLOROFLUOROMETHANE	ND	ND	1.0
1,2,3-TRICHLOROPROPANE	ND	ND	1.0
1,2,4-TRIMETHYLBENZENE	ND	ND	1.0
1,3,5-TRIMETHYLBENZENE	ND	ND	1.0
VINYL CHLORIDE	ND	ND	2.0
o-XYLENE	ND	ND	1.0
m+p-XYLENES	ND	ND	1.0
MTBE	ND	ND	10.0

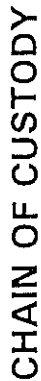


COMPLETE ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY

911 Bridgeport Avenue
900 Shelton Plaza
Shelton, CT 06484
Tel (203) 925-1133
FAX (203) 925-1140

COMPANY NAME AND ADDRESS WOODWARD & GREEN 10 DIANA COURT CHESHIRE, CT 06410				REPORT TO: FRED LAESEN		PROJECT #: 98053.01		PROJECT LOCATION: MIDDLETOWN		PURCHASE ORDER #:		SAMPLED BY: FRED LAESEN		
RELINQUISHED BY:		DATE		TIME		RECEIVED BY:		DATE		TIME		ANALYSIS REQUIRED		
Fred Laesen		7/2/98		1400		W. P. Lausen		7-2-98		1400		VOC #8260		
W. P. Lausen		7-2-98		1410		[Signature]		7/2		4:25		PCRA METALS		
RELINQUISHED BY:		DATE		TIME		RECEIVED BY:		DATE		TIME		Cu, Ni		
W. P. Lausen		7-2-98		1410		[Signature]		7/2		4:25		Cyanide		
SAMPLE #	SAMPLE LOCATION	DATE	TIME	DATE	TIME	SAMPLE MATRIX	PRIORITY YES / NO	# OF CONTAINERS						
AOC #6A	AG TANKS	7/2/98	0825			Soil		2	X	X	X	X		
AOC #6B	AG TANKS	7/2/98	0830			Soil		2	X	X	X	X		
AOC #2A	LOADING RACK	7/2/98	0930			Soil		2	X	X	X	X		
AOC #2B	L.R.	7/2/98	0940			Soil		2	X	X	X	X		
AOC #2C	L.R.	7/2/98	1000			Soil		2	X	X	X	X		
AOC #2D	L.R.	7/2/98	1010			Soil		2	X	X	X	X		
AOC #1A	TANK FARM	7/2/98	1030			Soil		2	X	X	X	X		
AOC #1B	TANK FARM	7/2/98	1045			Soil		2	X	X	X	X		
AOC #1C	T.F.	7/2/98	1115			Soil		2	X	X	X	X		
SPECIAL INSTRUCTIONS														COMMENTS



911 Bridgeport Avenue
900 Shelton Plaza
Shelton, CT 06484
Tel (203) 925-1133
FAX (203) 925-1140

COMPLETE ENVIRONMENTAL TESTING, INC.

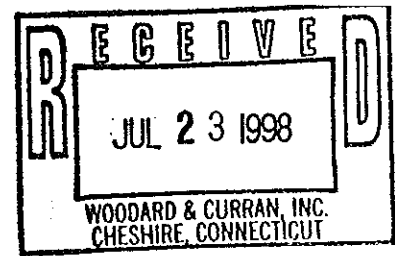
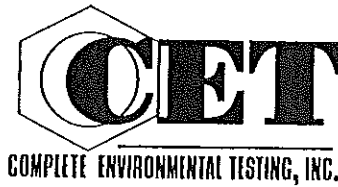
[illegible]



911 Bridgeport Avenue
900 Shelton Plaza
Shelton, CT 06484
Tel (203) 925-1133
FAX (203) 925-1140

COMPLETE ENVIRONMENTAL TESTING, INC.

[illegible]



911 Bridgeport Avenue
900 Shelton Plaza
Shelton, CT 06484

July 16, 1998

Mr. Fred Larsen
Woodard & Curran
15 Highland Ave.
Cheshire, CT 06410

Tel: (203) 925-1133
Fax: (203) 925-1140
e-mail: comenvlst@aol.com

RE: Analysis of 14 water samples collected 7/8/98.
PROJECT: 98053.01, Middletown
CET #: 98-4691

The samples were analyzed for the parameters listed on the following pages.

Please call us if you have any questions.

David Ditta
Laboratory Director

CLIENT: Woodard & Curran

PROJECT: 98053.01

CET #: 98-4691

<u>Diss. Metals:</u>	<u>MW-201</u>	<u>MW-101</u>	<u>MW-102</u>	<u>MW-202</u>
Pb	ND<0.013	ND<0.013	ND<0.013	ND<0.013
Cd	ND<0.005	ND<0.005	ND<0.005	ND<0.005
Cr	ND<0.05	ND<0.05	ND<0.05	ND<0.05
As	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Se	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Hg	ND<0.002	ND<0.002	ND<0.002	ND<0.002
Ba	0.07	ND<0.05	0.08	0.11
Ag	ND<0.02	ND<0.02	ND<0.02	ND<0.02
Cu	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Ni	ND<0.05	ND<0.05	ND<0.05	ND<0.05
TPH (418.1)	ND<0.50	ND<0.50	ND<0.50	ND<0.50
Cyanide	ND<0.10	ND<0.10	ND<0.10	ND<0.10

<u>Diss. Metals:</u>	<u>Eq. Blank</u>	<u>MW-103</u>	<u>MW-104</u>	<u>MW-105</u>
Pb	ND<0.013	ND<0.013	ND<0.013	ND<0.013
Cd	ND<0.005	ND<0.005	ND<0.005	ND<0.005
Cr	ND<0.05	ND<0.05	ND<0.05	ND<0.05
As	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Se	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Hg	ND<0.002	ND<0.002	ND<0.002	ND<0.002
Ba	ND<0.05	0.13	0.06	0.76
Ag	ND<0.02	ND<0.02	ND<0.02	ND<0.02
Cu	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Ni	ND<0.05	ND<0.05	ND<0.05	ND<0.05
TPH (418.1)	ND<0.50	ND<0.50	ND<0.50	ND<0.50
Cyanide	ND<0.10	ND<0.10	ND<0.10	ND<0.10

<u>Diss. Metals:</u>	<u>MW-106</u>	<u>MW-108</u>	<u>MW-107</u>	<u>MW-203</u>
Pb	ND<0.013	ND<0.013	ND<0.013	ND<0.013
Cd	ND<0.005	ND<0.005	ND<0.005	ND<0.005
Cr	ND<0.05	ND<0.05	ND<0.05	ND<0.05
As	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Se	ND<0.01	ND<0.01	ND<0.01	ND<0.01
Hg	ND<0.002	ND<0.002	ND<0.002	ND<0.002
Ba	0.15	0.23	0.09	0.08
Ag	ND<0.02	ND<0.02	ND<0.02	ND<0.02
Cu	ND<0.05	ND<0.05	ND<0.05	ND<0.05
Ni	ND<0.05	ND<0.05	ND<0.05	ND<0.05
TPH (418.1)	ND<0.50	ND<0.50	ND<0.50	ND<0.50
Cyanide	ND<0.10	ND<0.10	ND<0.10	ND<0.10

<u>Diss. Metals:</u>	<u>MW-204</u>
Pb	ND<0.013
Cd	ND<0.005
Cr	ND<0.05
As	ND<0.05
Se	ND<0.01
Hg	ND<0.002
Ba	0.06
Ag	ND<0.02
Cu	ND<0.05
Ni	ND<0.05
TPH (418.1)	ND<0.50
Cyanide	ND<0.10

Results are in ppm.

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4691

MATRIX: water
UNITS: ppb
DATE ANALYZED: 7/10/98

	MW-201	MW-101	MW-102	DETECTION LIMIT
BENZENE	ND	ND	ND	1.0
BROMOBENZENE	ND	ND	ND	5.0
BROMOCHLOROMETHANE	ND	ND	ND	1.0
BROMODICHLOROMETHANE	ND	ND	ND	1.0
BROMOFORM	ND	ND	ND	5.0
BROMOMETHANE	ND	ND	ND	10.0
n-BUTYLBENZENE	ND	ND	ND	1.0
sec-BUTYLBENZENE	ND	ND	ND	1.0
tert-BUTYLBENZENE	ND	ND	ND	1.0
CARBON TETRACHLORIDE	ND	ND	4.9	1.0
CHLOROBENZENE	ND	ND	ND	1.0
CHLOROETHANE	ND	ND	ND	10.0
CHLOROFORM	ND	ND	14	1.0
CHLOROMETHANE	ND	ND	ND	10.0
2-CHLOROTOLUENE	ND	ND	ND	1.0
4-CHLOROTOLUENE	ND	ND	ND	1.0
DIBROMOCHLOROMETHANE	ND	ND	ND	1.0
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	ND	5.0
1,2-DIBROMOETHANE	ND	ND	ND	1.0
DIBROMOMETHANE	ND	ND	ND	5.0
1,2-DICHLOROBENZENE	ND	ND	ND	1.0
1,3-DICHLOROBENZENE	ND	ND	ND	1.0
1,4-DICHLOROBENZENE	ND	ND	ND	1.0
DICHLORODIFLUOROMETHANE	ND	ND	ND	10.0
1,1-DICHLOROETHANE	ND	ND	ND	1.0
1,2-DICHLOROETHANE	ND	ND	ND	1.0
1,1-DICHLOROETHYLENE	ND	ND	ND	1.0
cis-1,2-DICHLOROETHYLENE	ND	ND	15	1.0
trans-1,2-DICHLOROETHYLENE	ND	ND	ND	1.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4691

MATRIX: water
UNITS: ppb
DATE ANALYZED: 7/10/98

	MW-201	MW-101	MW-102	DETECTION LIMIT
1,2-DICHLOROPROPANE	ND	ND	ND	1.0
1,3-DICHLOROPROPANE	ND	ND	ND	1.0
2,2-DICHLOROPROPANE	ND	ND	ND	1.0
1,1-DICHLOROPROPENE	ND	ND	ND	1.0
ETHYL BENZENE	ND	ND	ND	1.0
HEXACHLOROBUTADIENE	ND	ND	ND	1.0
ISOPROPYLBENZENE	ND	ND	ND	1.0
4-ISOPROPYLTOLUENE	ND	ND	ND	1.0
METHYLENE CHLORIDE	ND	ND	ND	5.0
NAPHTHALENE	ND	ND	ND	1.0
n-PROPYLBENZENE	ND	ND	ND	1.0
STYRENE	ND	ND	ND	1.0
1,1,1,2-TETRACHLOROETHANE	ND	ND	ND	1.0
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	1.0
TETRACHLOROETHYLENE	ND	ND	16	1.0
TOLUENE	ND	ND	ND	1.0
1,2,3-TRICHLOROBENZENE	ND	ND	ND	1.0
1,2,4-TRICHLOROBENZENE	ND	ND	ND	1.0
1,1,1-TRICHLOROETHANE	ND	ND	ND	1.0
1,1,2-TRICHLOROETHANE	ND	ND	ND	1.0
TRICHLOROETHYLENE	ND	ND	3.8	1.0
TRICHLOROFLUOROMETHANE	ND	ND	ND	1.0
1,2,3-TRICHLOROPROPANE	ND	ND	ND	1.0
1,2,4-TRIMETHYLBENZENE	ND	ND	ND	1.0
1,3,5-TRIMETHYLBENZENE	ND	ND	ND	1.0
VINYL CHLORIDE	ND	ND	ND	2.0
o-XYLENE	ND	ND	ND	1.0
m+p-XYLENES	ND	ND	ND	1.0
MTBE	ND	ND	ND	10.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4691

MATRIX: water
UNITS: ppb
DATE ANALYZED: 7/10/98

	MW-202	Eq. Blank	MW-103	DETECTION LIMIT
BENZENE	ND	ND	ND	1.0
BROMOBENZENE	ND	ND	ND	5.0
BROMOCHLOROMETHANE	ND	ND	ND	1.0
BROMODICHLOROMETHANE	ND	ND	ND	1.0
BROMOFORM	ND	ND	ND	5.0
BROMOMETHANE	ND	ND	ND	10.0
n-BUTYLBENZENE	ND	ND	ND	1.0
sec-BUTYLBENZENE	ND	ND	ND	1.0
tert-BUTYLBENZENE	ND	ND	ND	1.0
CARBON TETRACHLORIDE	ND	ND	ND	1.0
CHLOROBENZENE	ND	ND	ND	1.0
CHLOROETHANE	ND	ND	ND	10.0
CHLOROFORM	ND	ND	ND	1.0
CHLOROMETHANE	ND	ND	ND	10.0
2-CHLOROTOLUENE	ND	ND	ND	1.0
4-CHLOROTOLUENE	ND	ND	ND	1.0
DIBROMOCHLOROMETHANE	ND	ND	ND	1.0
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	ND	5.0
1,2-DIBROMOETHANE	ND	ND	ND	1.0
DIBROMOMETHANE	ND	ND	ND	5.0
1,2-DICHLOROBENZENE	ND	ND	ND	1.0
1,3-DICHLOROBENZENE	ND	ND	ND	1.0
1,4-DICHLOROBENZENE	ND	ND	ND	1.0
DICHLORODIFLUOROMETHANE	ND	ND	ND	10.0
1,1-DICHLOROETHANE	ND	ND	ND	1.0
1,2-DICHLOROETHANE	ND	ND	ND	1.0
1,1-DICHLOROETHYLENE	ND	ND	ND	1.0
cis-1,2-DICHLOROETHYLENE	ND	ND	7.0	1.0
trans-1,2-DICHLOROETHYLENE	ND	ND	ND	1.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4691

MATRIX: water
UNITS: ppb
DATE ANALYZED: 7/10/98

	MW-202	Eq. Blank	MW-103	DETECTION LIMIT
1,2-DICHLOROPROPANE	ND	ND	ND	1.0
1,3-DICHLOROPROPANE	ND	ND	ND	1.0
2,2-DICHLOROPROPANE	ND	ND	ND	1.0
1,1-DICHLOROPROPENE	ND	ND	ND	1.0
ETHYL BENZENE	ND	ND	ND	1.0
HEXACHLOROBUTADIENE	ND	ND	ND	1.0
ISOPROPYLBENZENE	ND	ND	ND	1.0
4-ISOPROPYLTOLUENE	ND	ND	ND	1.0
METHYLENE CHLORIDE	ND	ND	ND	5.0
NAPHTHALENE	ND	ND	ND	1.0
n-PROPYLBENZENE	ND	ND	ND	1.0
STYRENE	ND	ND	ND	1.0
1,1,1,2-TETRACHLOROETHANE	ND	ND	ND	1.0
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	1.0
TETRACHLOROETHYLENE	ND	ND	17	1.0
TOLUENE	ND	ND	ND	1.0
1,2,3-TRICHLOROBENZENE	ND	ND	ND	1.0
1,2,4-TRICHLOROBENZENE	ND	ND	ND	1.0
1,1,1-TRICHLOROETHANE	ND	ND	1.4	1.0
1,1,2-TRICHLOROETHANE	ND	ND	ND	1.0
TRICHLOROETHYLENE	ND	ND	4.6	1.0
TRICHLOROFLUOROMETHANE	ND	ND	ND	1.0
1,2,3-TRICHLOROPROPANE	ND	ND	ND	1.0
1,2,4-TRIMETHYLBENZENE	ND	ND	ND	1.0
1,3,5-TRIMETHYLBENZENE	ND	ND	ND	1.0
VINYL CHLORIDE	ND	ND	ND	2.0
o-XYLENE	ND	ND	ND	1.0
m+p-XYLENES	ND	ND	ND	1.0
MTBE	ND	ND	ND	10.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4691

MATRIX: water
UNITS: ppb
DATE ANALYZED: 7/10/98

	MW-104	MW-105	MW-106	DETECTION LIMIT
BENZENE	ND	ND	ND	1.0
BROMOBENZENE	ND	ND	ND	5.0
BROMOCHLOROMETHANE	ND	ND	ND	1.0
BROMODICHLOROMETHANE	ND	ND	ND	1.0
BROMOFORM	ND	ND	ND	5.0
BROMOMETHANE	ND	ND	160	10.0
n-BUTYLBENZENE	ND	ND	ND	1.0
sec-BUTYLBENZENE	ND	ND	ND	1.0
tert-BUTYLBENZENE	ND	ND	ND	1.0
CARBON TETRACHLORIDE	ND	ND	ND	1.0
CHLOROBENZENE	ND	ND	ND	1.0
CHLOROETHANE	ND	ND	ND	10.0
CHLOROFORM	ND	ND	ND	1.0
CHLOROMETHANE	ND	ND	ND	10.0
2-CHLOROTOLUENE	ND	ND	ND	1.0
4-CHLOROTOLUENE	ND	ND	ND	1.0
DIBROMOCHLOROMETHANE	ND	ND	ND	1.0
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	ND	5.0
1,2-DIBROMOETHANE	ND	ND	ND	1.0
DIBROMOMETHANE	ND	ND	ND	5.0
1,2-DICHLOROBENZENE	ND	ND	ND	1.0
1,3-DICHLOROBENZENE	ND	ND	ND	1.0
1,4-DICHLOROBENZENE	ND	ND	ND	1.0
DICHLORODIFLUOROMETHANE	ND	ND	ND	10.0
1,1-DICHLOROETHANE	2.4	ND	35	1.0
1,2-DICHLOROETHANE	ND	ND	8.1	1.0
1,1-DICHLOROETHYLENE	ND	ND	1.1	1.0
cis-1,2-DICHLOROETHYLENE	2.8	ND	140	1.0
trans-1,2-DICHLOROETHYLENE	ND	ND	ND	1.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4691

MATRIX: water
UNITS: ppb
DATE ANALYZED: 7/10/98

	MW-104	MW-105	MW-106	DETECTION LIMIT
1,2-DICHLOROPROPANE	ND	ND	ND	1.0
1,3-DICHLOROPROPANE	ND	ND	ND	1.0
2,2-DICHLOROPROPANE	ND	ND	ND	1.0
1,1-DICHLOROPROPENE	ND	ND	ND	1.0
ETHYL BENZENE	ND	ND	ND	1.0
HEXACHLOROBUTADIENE	ND	ND	ND	1.0
ISOPROPYLBENZENE	ND	ND	ND	1.0
4-ISOPROPYLTOLUENE	ND	ND	ND	1.0
METHYLENE CHLORIDE	ND	ND	ND	5.0
NAPHTHALENE	ND	ND	ND	1.0
n-PROPYLBENZENE	ND	ND	ND	1.0
STYRENE	ND	ND	ND	1.0
1,1,1,2-TETRACHLOROETHANE	ND	ND	ND	1.0
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	1.0
TETRACHLOROETHYLENE	ND	1.4	37	1.0
TOLUENE	ND	ND	ND	1.0
1,2,3-TRICHLOROBENZENE	ND	ND	ND	1.0
1,2,4-TRICHLOROBENZENE	ND	ND	ND	1.0
1,1,1-TRICHLOROETHANE	ND	ND	2.5	1.0
1,1,2-TRICHLOROETHANE	ND	ND	ND	1.0
TRICHLOROETHYLENE	ND	1.2	61	1.0
TRICHLOROFLUOROMETHANE	ND	ND	ND	1.0
1,2,3-TRICHLOROPROPANE	ND	ND	ND	1.0
1,2,4-TRIMETHYLBENZENE	ND	ND	ND	1.0
1,3,5-TRIMETHYLBENZENE	ND	ND	ND	1.0
VINYL CHLORIDE	ND	ND	74	2.0
o-XYLENE	ND	ND	ND	1.0
m+p-XYLENES	ND	ND	ND	1.0
MTBE	ND	ND	ND	10.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4691

MATRIX: water
UNITS: ppb
DATE ANALYZED: 7/10/98

	MW-108	MW-107	MW-203	DETECTION LIMIT
BENZENE	ND	ND	ND	1.0
BROMOBENZENE	ND	ND	ND	5.0
BROMOCHLOROMETHANE	ND	ND	ND	1.0
BROMODICHLOROMETHANE	ND	ND	ND	1.0
BROMOFORM	ND	ND	ND	5.0
BROMOMETHANE	ND	ND	ND	10.0
n-BUTYLBENZENE	ND	ND	ND	1.0
sec-BUTYLBENZENE	ND	ND	ND	1.0
tert-BUTYLBENZENE	ND	ND	ND	1.0
CARBON TETRACHLORIDE	ND	ND	ND	1.0
CHLOROBENZENE	ND	ND	ND	1.0
CHLOROETHANE	ND	ND	ND	10.0
CHLOROFORM	ND	ND	ND	1.0
CHLOROMETHANE	ND	ND	ND	10.0
2-CHLOROTOLUENE	ND	ND	ND	1.0
4-CHLOROTOLUENE	ND	ND	ND	1.0
DIBROMOCHLOROMETHANE	ND	ND	ND	1.0
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	ND	5.0
1,2-DIBROMOETHANE	ND	ND	ND	1.0
DIBROMOMETHANE	ND	ND	ND	5.0
1,2-DICHLOROBENZENE	ND	ND	ND	1.0
1,3-DICHLOROBENZENE	ND	ND	ND	1.0
1,4-DICHLOROBENZENE	ND	ND	ND	1.0
DICHLORODIFLUOROMETHANE	ND	ND	ND	10.0
1,1-DICHLOROETHANE	ND	1.8	ND	1.0
1,2-DICHLOROETHANE	ND	3.7	ND	1.0
1,1-DICHLOROETHYLENE	ND	ND	ND	1.0
cis-1,2-DICHLOROETHYLENE	1.6	2.9	ND	1.0
trans-1,2-DICHLOROETHYLENE	ND	ND	ND	1.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4691

MATRIX: water
UNITS: ppb
DATE ANALYZED: 7/10/98

	MW-108	MW-107	MW-203	DETECTION LIMIT
1,2-DICHLOROPROPANE	ND	ND	ND	1.0
1,3-DICHLOROPROPANE	ND	ND	ND	1.0
2,2-DICHLOROPROPANE	ND	ND	ND	1.0
1,1-DICHLOROPROPENE	ND	ND	ND	1.0
ETHYL BENZENE	ND	ND	ND	1.0
HEXACHLOROBUTADIENE	ND	ND	ND	1.0
ISOPROPYLBENZENE	ND	ND	ND	1.0
4-ISOPROPYLTOLUENE	ND	ND	ND	1.0
METHYLENE CHLORIDE	ND	ND	ND	5.0
NAPHTHALENE	ND	ND	ND	1.0
n-PROPYLBENZENE	ND	ND	ND	1.0
STYRENE	ND	ND	ND	1.0
1,1,1,2-TETRACHLOROETHANE	ND	ND	ND	1.0
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND	1.0
TETRACHLOROETHYLENE	ND	1.3	ND	1.0
TOLUENE	ND	ND	ND	1.0
1,2,3-TRICHLOROBENZENE	ND	ND	ND	1.0
1,2,4-TRICHLOROBENZENE	ND	ND	ND	1.0
1,1,1-TRICHLOROETHANE	ND	1.3	ND	1.0
1,1,2-TRICHLOROETHANE	ND	ND	ND	1.0
TRICHLOROETHYLENE	1.8	ND	ND	1.0
TRICHLOROFLUOROMETHANE	ND	ND	ND	1.0
1,2,3-TRICHLOROPROPANE	ND	ND	ND	1.0
1,2,4-TRIMETHYLBENZENE	ND	ND	ND	1.0
1,3,5-TRIMETHYLBENZENE	ND	ND	ND	1.0
VINYL CHLORIDE	ND	ND	ND	2.0
o-XYLENE	ND	ND	ND	1.0
m+p-XYLENES	ND	ND	ND	1.0
MTBE	ND	ND	ND	10.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4691

MATRIX: water
UNITS: ppb
DATE ANALYZED: 7/10/98

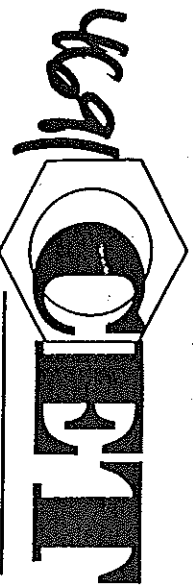
	MW-204	Trip Blank	DETECTION LIMIT
BENZENE	ND	ND	1.0
BROMOBENZENE	ND	ND	5.0
BROMOCHLOROMETHANE	ND	ND	1.0
BROMODICHLOROMETHANE	ND	ND	1.0
BROMOFORM	ND	ND	5.0
BROMOMETHANE	ND	ND	10.0
n-BUTYLBENZENE	ND	ND	1.0
sec-BUTYLBENZENE	ND	ND	1.0
tert-BUTYLBENZENE	ND	ND	1.0
CARBON TETRACHLORIDE	ND	ND	1.0
CHLOROBENZENE	ND	ND	1.0
CHLOROETHANE	ND	ND	10.0
CHLOROFORM	ND	ND	1.0
CHLOROMETHANE	ND	ND	10.0
2-CHLOROTOLUENE	ND	ND	1.0
4-CHLOROTOLUENE	ND	ND	1.0
DIBROMOCHLOROMETHANE	ND	ND	1.0
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	5.0
1,2-DIBROMOETHANE	ND	ND	1.0
DIBROMOMETHANE	ND	ND	5.0
1,2-DICHLOROBENZENE	ND	ND	1.0
1,3-DICHLOROBENZENE	ND	ND	1.0
1,4-DICHLOROBENZENE	ND	ND	1.0
DICHLORODIFLUOROMETHANE	ND	ND	10.0
1,1-DICHLOROETHANE	ND	ND	1.0
1,2-DICHLOROETHANE	ND	ND	1.0
1,1-DICHLOROETHYLENE	ND	ND	1.0
cis-1,2-DICHLOROETHYLENE	ND	ND	1.0
trans-1,2-DICHLOROETHYLENE	ND	ND	1.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MS

CLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-4691

MATRIX: water
UNITS: ppb
DATE ANALYZED: 7/10/98

	MW-204	Trip Blank	DETECTION LIMIT
1,2-DICHLOROPROPANE	ND	ND	1.0
1,3-DICHLOROPROPANE	ND	ND	1.0
2,2-DICHLOROPROPANE	ND	ND	1.0
1,1-DICHLOROPROPENE	ND	ND	1.0
ETHYL BENZENE	ND	ND	1.0
HEXACHLOROBUTADIENE	ND	ND	1.0
ISOPROPYLBENZENE	ND	ND	1.0
4-ISOPROPYLTOLUENE	ND	ND	1.0
METHYLENE CHLORIDE	ND	ND	5.0
NAPHTHALENE	ND	ND	1.0
n-PROPYLBENZENE	ND	ND	1.0
STYRENE	ND	ND	1.0
1,1,1,2-TETRACHLOROETHANE	ND	ND	1.0
1,1,2,2-TETRACHLOROETHANE	ND	ND	1.0
TETRACHLOROETHYLENE	ND	ND	1.0
TOLUENE	ND	ND	1.0
1,2,3-TRICHLOROBENZENE	ND	ND	1.0
1,2,4-TRICHLOROBENZENE	ND	ND	1.0
1,1,1-TRICHLOROETHANE	ND	ND	1.0
1,1,2-TRICHLOROETHANE	ND	ND	1.0
TRICHLOROETHYLENE	ND	ND	1.0
TRICHLOROFLUOROMETHANE	ND	ND	1.0
1,2,3-TRICHLOROPROPANE	ND	ND	1.0
1,2,4-TRIMETHYLBENZENE	ND	ND	1.0
1,3,5-TRIMETHYLBENZENE	ND	ND	1.0
VINYL CHLORIDE	ND	ND	2.0
o-XYLENE	ND	ND	1.0
m+p-XYLENES	ND	ND	1.0
MTBE	ND	ND	10.0



CHAIN OF CUSTODY

911 Bridgeport Avenue
900 Shelton Plaza
Shelton, CT 06484
Tel (203) 925-1133
FAX (203) 925-1140

COMPLETE ENVIRONMENTAL TESTING, INC.

COMPANY NAME AND ADDRESS: WOODARD & CURRAN
10 DIANA COURT
CHESHIRE, CT 06416 (NEW MARKET)

RELINQUISHED BY: *W. E. Decker*

RECEIVED BY: *W. E. Decker*

DATE: 7/8/98
TIME: 1315

RELINQUISHED BY: *W. E. Decker*

DATE: 7/8/98
TIME: 1415

RECEIVED BY: *W. E. Decker*

DATE: 7-8-98
TIME: 1315

RELINQUISHED BY: *W. E. Decker*

DATE: 7/8/98
TIME: 1415

RECEIVED BY: *W. E. Decker*

DATE: 7/8/98
TIME: 1415

ANALYSIS REQUIRED

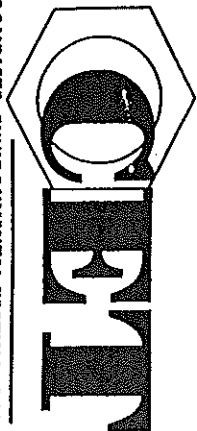
REPORT TO: FRED LARSEN
PROJECT #: 98053.01
PROJECT LOCATION: WOODARD & CURRAN
PURCHASE ORDER #:
SAMPLED BY: FRED LARSEN
DATE: 7/8/98

TPH - 418.1
VOA - 8260
DISSOLVED METALS
CYANIDE

SAMPLE #	SAMPLE LOCATION	DATE	TIME	SAMPLE MATRIX	PRIORITY YES / NO	# OF CONTAINERS	DATE	TIME	ANALYSIS REQUIRED
MW-201		7/8/98	0710	WATER		5			
MW-101		7/8/98	0800	WATER		5			
MW-102		7/8/98	0840	WATER		5			
MW-202		7/8/98	0910	WATER		5			
EQUIPMENT	BLANK	7/8/98	0855	WATER		5			
MW-103		7/8/98	0940	WATER		5			
MW-104		7/8/98	0955	WATER		5			
MW-105		7/8/98	1015	WATER		5			
MW-106		7/8/98	1040	WATER		5			

SPECIAL INSTRUCTIONS

COMMENTS: DISSOLVED METALS HAVE BEEN FILTERED



COMPLETE ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY

911 Bridgeport Avenue
900 Shelton Plaza
Shelton, CT 06484
Tel (203) 925-1133
FAX (203) 925-1140

COMPANY NAME AND ADDRESS

Woodward & Curran
10 Diana Court

RELINQUISHED BY:

Steve Lane

RELINQUISHED BY:

W. E. Louch

RELINQUISHED BY:

DATE TIME
7/8/98 1315
DATE TIME
7/8/98 1455

RECEIVED BY:
W. E. Louch

RECEIVED BY:

DATE TIME
7-8-98 1315
DATE TIME
7/8 1455

ANALYSIS REQUIRED

REPORT TO: Fred Laeseu
PROJECT #: 98053,01
PROJECT LOCATION: MIDDLEBURY
PURCHASE ORDER #:
SAMPLED BY: F. Laeseu K. LANCRAFT

SAMPLE #	SAMPLE LOCATION	DATE	TIME	SAMPLE MATRIX	PRIORITY YES / NO	# OF CONTAINERS
----------	-----------------	------	------	---------------	-------------------	-----------------

TPH - 418.1	VDA - 8260	DISS. METALS	CYANIDE	HEXAVALENT CHROMIUM
-------------	------------	--------------	---------	---------------------

MW-108		7/8/98	1000	WATER		5
--------	--	--------	------	-------	--	---

X	X	X	X	
---	---	---	---	--

MW-107		7/9/98	1130	WATER		5
--------	--	--------	------	-------	--	---

X	X	X	X	
---	---	---	---	--

MW-203		7/8/98	1145	WATER		5
--------	--	--------	------	-------	--	---

X	X	X	X	
---	---	---	---	--

MW-204		7/8/98	1210	WATER		5
--------	--	--------	------	-------	--	---

X	X	X	X	
---	---	---	---	--

AC53		7/8/98	1230	SOIL		1
------	--	--------	------	------	--	---

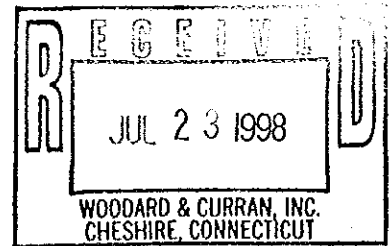
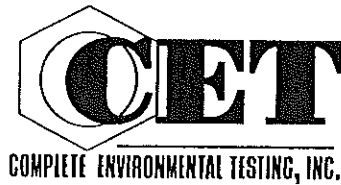
			X	
--	--	--	---	--

TRIP BLANK		7/8/98	1235	WATER		2
------------	--	--------	------	-------	--	---

X				
---	--	--	--	--

SPECIAL INSTRUCTIONS

COMMENTS Dissolved Metals Have Been Filtered



911 Bridgeport Avenue
900 Shelton Plaza
Shelton, CT 06484

Tel: (203) 925-1133
Fax: (203) 925-1140
e-mail: comenvtst@aol.com

July 21, 1998

Mr. Fred Larsen
Woodard & Curran
515 Highland Ave.
Cheshire, CT 06410

RE: Analysis of 1 soil sample collected 7/8/98.
PROJECT: 98053.01, Middletown
CET #: 98-4692

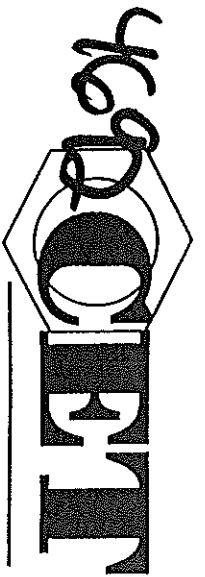
AOC5B

Cr+6
ND<5.0

Results are in ppm.

Please call if you have any questions.

David Ditta
Laboratory Director



CHAIN OF CUSTODY

COMPLETE ENVIRONMENTAL TESTING, INC.

911 Bridgeport Avenue
900 Shelton Plaza
Shelton, CT 06484
Tel (203) 925-1133
FAX (203) 925-1140

COMPANY NAME AND ADDRESS

WOODWARD & CURRAN
10 DIANA COURT

CHESHIRE, CT 06410

ANALYSIS REQUIRED

REPORT TO: **FRED LAESCH** PROJECT #: **99053.01** PROJECT LOCATION: **MIDDLEBURY** PURCHASE ORDER #: **F L A E S C H** SAMPLED BY: **K L A N C E A F T**

RELINQUISHED BY:

RELINQUISHED BY:

RELINQUISHED BY:

RELINQUISHED BY:

SAMPLE #

SAMPLE LOCATION

DATE

TIME

SAMPLE MATRIX

PRIORITY YES / NO

OF CONTAINERS

DATE

TIME

RECEIVED BY:

DATE

TIME

DATE

TIME

RECEIVED BY:

DATE

TIME

DATE

TIME

RECEIVED BY:

DATE

TIME

TPH - 418.1
VOA - 8260
DISS. METALS
CYANIDE
HEXAVALENT CHROMIUM

SPECIAL INSTRUCTIONS

COMMENTS Dissolved Metals Have Been Filtered

APPENDIX C
GEOPROBE SUMMARY

ZEBRA



Woodard & Curran
10 Diana Court
Suite 202
Cheshire, Connecticut 06410

August 4, 1998

Attention: Mr. Gerard Fordham

RE: Project Summary, Geoprobe Sampling Services
Portland Chemical Works - Middletown, Connecticut
Work Performed on August 3, 1998

Dear Mr. Fordham:

Following is a summary of site activities performed by ZEBRA Environmental at the Portland Chemical Works site located in Middletown, Connecticut. The work was performed on August 3, 1998.

PROJECT PERSONNEL ON SITE:

Mr. Gerard Fordham - Woodard & Curran
Ms. Kate Cancraft - Woodard & Curran
Mr. Robert Burawa - ZEBRA
Mr. Richard Miller - ZEBRA

ZEBRA mobilized a fully equipped ATV-mounted Geoprobe unit to the project site on August 3, 1998. ZEBRA personnel met Mr. Gerard Fordham of Woodard & Curran at approximately 9:30 AM and walked the site with Mr. Fordham noting utilities and anticipated location of sampling points.

The project involved collecting 28 soil samples from 14 points identified by Mr. Fordham. The location of the points was recorded on a site plan by Mr. Fordham. To collect soil samples, Macro Core (MC) open samplers were used. These samplers are open tube design and measure approximately 2" in outside diameter by 44" long. The samplers are fitted with a removable cutting shoe and clear acetate liner. Samples were collected from 0' - 8' below grade and measured approximately 44" by 1½" in diameter. Each of the samplers used was fitted with a new acetate liner prior to use. The acetate liner assists in the removal of the soil sample from the tube and helps insure sample integrity.

A total of twenty-eight (28) soil samples were collected by ZEBRA during the one (1) day on site.

Woodard & Curran - Middletown, Connecticut

August 4, 1998

All sampling tools were cleaned with Alconox, double rinsed with tap water and a final rinse of distilled water between sample collection. All polyethylene tubing and acetate liners were discarded after use.

All samples were left in the custody of Mr. Fordham and all drilled holes were sealed appropriately prior to leaving the site.

ZEBRA appreciates the opportunity to provide these services and looks forward to working with Woodard & Curran in the future. Should there be any questions regarding this project or our other services, please do not hesitate to call.

Sincerely,



Robert Burawa
ZEBRA Environmental Corp.

RB/sl

APPENDIX D

PHASE III ANALYTICAL RESULTS



911 Bridgeport Avenue
900 Shelton Plaza
Shelton, CT 06484

Tel: (203) 925-1133
Fax: (203) 925-1140
e-mail: comenvtst@aol.com

August 8, 1998

Mr. Jerry Fordham
Woodard & Curran
15 Highland Ave.
Cheshire, CT 06410

RE: Analysis of 39 soil samples collected 8/3/98.
PROJECT: 98053.01, Middletown
CET #: 98-5529

	<u>TPH (418.1)</u>		<u>TPH (418.1)</u>
2E	260	2T 0-4	640
2F	88	2T 4-8	75
2G	140	2U	670
2H	9200	2V 0-4	520
2I 0-4	65	2V 4-8	<50
2I 4-8	<50	5B 0-4	57
2J 0-4	92	5B 4-8	<50
2J 4-8	<50	5C 0-4	58
2K 0-4	140	5C 4-8	<50
2K 4-8	<50	5D 0-4	130
2L	2600	5E 0-4	59
2M	10000	5E 4-8	<50
2N 0-4	120	6C 0-4	1600
2N 4-8	<50	6C 4-8	2700
2O	5100	6D 0-4	27000
2P	6700	6D 4-8	870
2Q 0-4	1400	6E 0-4	710
2Q 4-8	<50	6E 4-8	74
2R	3800	DUPLICATE 2	3100
2S	1100		

Results are in ppm.

David Ditta
Laboratory Director



911 Bridgeport Avenue
900 Shelton Plaza
Shelton, CT 06484

Tel: (203) 925-1133
Fax: (203) 925-1140
e-mail: comenvtst@aol.com

August 8, 1998

Mr. Jerry Fordham
Woodard & Curran
515 Highland Ave.
Cheshire, CT 06410


RE: Analysis of 2 soil samples collected 8/3/98.
PROJECT: 98053.01, Middletown
CET #: 98-5530

	<u>TPH (418.1)</u>
5D 4-8	530
Duplicate 2	880

Results are in ppm.

In addition, the samples were analyzed per EPA method 8260. The results are on the following pages in ppb.

Please call if you have any questions.


David Ditta
Laboratory Director

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MSCLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-5530MATRIX: soil
UNITS: ppb
DATE ANALYZED: 8/8/98

	5D 4-8	Duplicate 1	DETECTION LIMIT
BENZENE	ND	ND	5.0
BROMOBENZENE	ND	ND	10.0
BROMOCHLOROMETHANE	ND	ND	5.0
BROMODICHLOROMETHANE	ND	ND	5.0
BROMOFORM	ND	ND	10.0
BROMOMETHANE	ND	ND	25.0
n-BUTYLBENZENE	ND	ND	5.0
sec-BUTYLBENZENE	ND	ND	5.0
tert-BUTYLBENZENE	ND	ND	5.0
CARBON TETRACHLORIDE	ND	ND	5.0
CHLOROBENZENE	ND	ND	5.0
CHLOROETHANE	ND	ND	25.0
CHLOROFORM	ND	ND	5.0
CHLOROMETHANE	ND	ND	25.0
2-CHLOROTOLUENE	ND	ND	5.0
4-CHLOROTOLUENE	ND	ND	5.0
DIBROMOCHLOROMETHANE	ND	ND	5.0
1,2-DIBROMO-3-CHLOROPROPANE	ND	ND	10.0
1,2-DIBROMOETHANE	ND	ND	5.0
DIBROMOMETHANE	ND	ND	10.0
1,2-DICHLOROBENZENE	ND	ND	5.0
1,3-DICHLOROBENZENE	ND	ND	5.0
1,4-DICHLOROBENZENE	ND	ND	5.0
DICHLORODIFLUOROMETHANE	ND	ND	25.0
1,1-DICHLOROETHANE	ND	7.1	5.0
1,2-DICHLOROETHANE	ND	ND	5.0
1,1-DICHLOROETHYLENE	ND	ND	5.0
cis-1,2-DICHLOROETHYLENE	110	90	5.0
trans-1,2-DICHLOROETHYLENE	ND	ND	5.0

EPA METHOD 8260
VOLATILE ORGANICS BY GC/MSCLIENT: Woodard & Curran
PROJECT #: 98053.01
CET #: 98-5530MATRIX: soil
UNITS: ppb
DATE ANALYZED: 8/8/98

	5D 4-8	Duplicate 1	DETECTION LIMIT
1,2-DICHLOROPROPANE	ND	ND	5.0
1,3-DICHLOROPROPANE	ND	ND	5.0
2,2-DICHLOROPROPANE	ND	ND	5.0
1,1-DICHLOROPROPENE	ND	ND	5.0
ETHYL BENZENE	ND	ND	5.0
HEXACHLOROBUTADIENE	ND	ND	5.0
ISOPROPYLBENZENE	ND	ND	5.0
4-ISOPROPYLTOLUENE	ND	ND	5.0
METHYLENE CHLORIDE	ND	ND	10.0
NAPHTHALENE	ND	ND	5.0
n-PROPYLBENZENE	ND	ND	5.0
STYRENE	ND	ND	5.0
1,1,1,2-TETRACHLOROETHANE	ND	ND	5.0
1,1,2,2-TETRACHLOROETHANE	ND	ND	5.0
TETRACHLOROETHYLENE	ND	ND	5.0
TOLUENE	ND	ND	5.0
1,2,3-TRICHLOROBENZENE	ND	ND	5.0
1,2,4-TRICHLOROBENZENE	ND	ND	5.0
1,1,1-TRICHLOROETHANE	ND	ND	5.0
1,1,2-TRICHLOROETHANE	ND	ND	5.0
TRICHLOROETHYLENE	ND	ND	5.0
TRICHLOROFLUOROMETHANE	ND	ND	5.0
1,2,3-TRICHLOROPROPANE	ND	ND	5.0
1,2,4-TRIMETHYLBENZENE	ND	ND	5.0
1,3,5-TRIMETHYLBENZENE	ND	ND	5.0
VINYL CHLORIDE	13	13	10.0
o-XYLENE	ND	ND	5.0
m+p-XYLENES	ND	ND	5.0
MTBE	ND	ND	10

WOODARD & CURRAN

Portland, Maine

Bangor, Maine

Dedham, Massachusetts

Fall River, Massachusetts

Concord, New Hampshire

Cheshire, Connecticut

Savoy, Illinois

Plantation, Florida

Operational offices across the U.S.

1-800-426-4262

www.woodardcurran.com
